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The Xylomyidae of China (Diptera)

Ding Yang1),2) and Akira Nagatomi1)

Abstract

The Chinese representatives of the family Xylomyidae are revised. Three genera and 35 species are now known from China, of which 29 species are described or redescribed in this paper and 25 species appear to be new to science.

Key words: Taxonomy, Orthorrhaphous Brachycera, Xylomyidae, 25 new species, China

Introduction

The family Xylomyidae contained about 100 species previously known from the world. Ten species were previously known from China. This paper lists 3 genera and 35 species. Twenty-nine species are described or redescribed, and 25 species appear to be new to science. The 6 species known from China are not available for our study.


We owe much to Verrall (1909), Nagatomi and Tanaka (1971) and Rozkošný (1973) whose several illustrations are copied for comparative purpose.

In Solva, the specific names apicimacula, basiflava, and dorsiflava are derived from hind tibia marking, striata from hind femur marking, uniflava from leg coloration, and mediomacul'a from wing marking.

The types are deposited in the Insect Collections of Beijing Agricultural University.

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Beijing, China, and some paratypes are preserved in Kagoshima University, Kagoshima, Japan.

**Family Xylomyidae**

Diagnosis. Body slender, with short hairs. Eyes bare and widely separated in both sexes; no difference in size of facets. Frons convergent toward vertex, its width just above antennae distinctly smaller than one eye; in *Formosolva*, frons very wide and nearly parallel-sided, its width just above antennae at least subequal to one eye; face somewhat convergent toward antennae; face with clypeus convex and nearly trapezoid. Lateral ocelli situated before uppermost corners of eyes, but situated opposite or behind uppermost corners of eyes in *Formosolva*. Antennal scape + pedicel much shorter than flagellum; flagellum 8-segmented, flagellomere 8 usually acute at tip. Proboscis well developed, fleshy; palpus well developed, 1- or 2-segmented. Mesonotum weakly convex; scutellum unarmed. Prosternum fused with propleura and forming a precoxal bridge. Anterior part of mesonotum, antero-lower part of meso-, hypo-, posterior (or upper) part of meta-, postscutellum, and usually pteropleuron bare (anterior part of metapleuron pilose). Hind femur and tibia distinctly longer than fore and mid femora and tibiae respectively. Hind coxa with a ventral process at base. Tibial spur formula 0–2–2 (in Chinese species). Wing: Alula developed; vein C ending at or before vein M₂; Rs arising well before base of discal cell; apices of veins R₁ and R₂₊₃ distant from each other; vein R₅ ending at wing tip; 4th posterior cell and anal cell closed just before wing margin; discal cell well developed, elongate. Abdomen slender with 7 or 8 visible segments; tergite 1 with a large membranous area at base in *Solva* and *Formosolva* (excluding *Solva basiflava*).

For genitalia of the Xylomyidae, see Nagatomi and Tanaka (1971), Rozkošný (1973), Daniels (1976), Nagatomi and Iwata (1976), and Webb (1984) in addition to this paper. For spermatheca of the Xylomyidae, see Papavero and Artigas (1991).

For the systematic position of the Xylomyidae among the orthorrhaphous Brachycera, see Woodley (1989). The Stratiomyidae + Xylomyidae form the Stratiomyoidea which may possibly include the Pantophthalmidae.

**Key (1) to Genera of Chinese Xylomyidae**

1. Palpus 2-segmented. Hind femur usually swollen and with ventral teeth (excluding *Solva varia*). Abdominal tergite 1 with large semicircular membranous area at base (excluding *Solva basiflava*). Male genitalia: Tergite 9 without apico-lateral process; cercus usually smaller or slender; sternite 10 simple; sternite 8 undivided apically.................................2

— Palpus 1-segmented. Hind femur slender and without ventral teeth. Abdominal tergite 1 without large membranous area at base. Male genitalia: Tergite 9 with apico-lateral processes; cercus larger and broad; sternite 10
trilobed apically; sternite 8 divided into two lobes apically

2. Lateral ocellus situated before uppermost corner of eye; frons convergent toward vertex, distinctly narrower than one eye; clypeus bounded by a lateral sulcus........................................................................................................... Solva

— Lateral ocellus situated opposite or behind uppermost corner of eye; frons nearly parallel-sided, at least as wide as one eye; clypeus bounded by a deep lateral pit................................................................. Formosolva (♀ unknown)

Genus Formosolva James


Diagnosis. [Male unknown]. Frons and face parallel-sided, and frons as wide as or wider than one eye and somewhat wider than face. Ocellar triangle much wider than long.

Figs. 1–3. Female heads of Formosolva spp., direct frontal view. 1, Formosolva devexifrons sp. nov.; 2, F. planifrons sp. nov.; 3, F. tuberifrons sp. nov.
Lateral ocelli situated opposite or behind uppermost corner of eye. Clypeus bounded by a deep lateral pit (not by a long lateral sulcus). Antenna much longer than fore femur; scape much longer than pedicel; flagellomeres 1–8 each slender and longer than wide; flagellomere 1 not thicker and longer than each of flagellomeres 2–5; flagellomere 8 without acute tip. Palpus two-segmented with segment 2 swollen. Thickening of costa ending beyond vein R5. Vein between 2nd basal- and 4th posterior cell is distinct (much shorter than that between 2nd basal- and discal cell) (in one wing of the holotype ♂ of planifrons this vein is absent). Hind femur narrower than hind coxa, with ventral teeth. Abdominal tergite 1 with a large

Figs. 4–5. *Formosolva tuberifrons* sp. nov., female. 4, Antenna, outer view; 5, palpus, lateral view. Figs. 6–7. *Formosolva planifrons* sp. nov., female. 6, Antenna, outer view; 7, palpus, lateral view. Fig. 8. *Formosolva devexifrons* sp. nov., female hind femur and tibia, anterior view.
basal membranous area.

Distribution. Continental China and Taiwan (4 species), and Burma (1 species).

Remarks. *Formosolva* was erected by James (1939) as a subgenus of *Solva*, but is here treated as an independent genus. *Formosolva* belongs to *Solva* s. lat., but is easily distinguished from *Solva* s. str. by having the face wider than in *Solva* s. str. and parallel-sided, and with the lateral ocelli situated opposite or behind the uppermost corner of the eye. No significant difference can be found between *Formosolva* and *Solva* s. str. in the structure of female genitalia, however.

According to Frey (1960), "*Ceratosolva* ichneumonea Frey, 1960 from Burma (based on 1♀) belongs to *Formosolva*, but Frey (1960) treated *Formosolva* as a synonym of *Ceratosolva de Meijere*, 1913.

**Key (2) to Species of Chinese *Formosolva* (based on ♀)**

1. Space between antennae wider than that between antenna and eye; frons just above antennae wider than one eye ................................................................. 2
   — Space between antennae narrower than that between antenna and eye; frons just above antennae as wide as one eye; frons rather flat. South China .................................................................................................................. *planifrons* sp. nov. (♂ unknown)

2(1). Frons distinctly concave and without median tubercle........................................ 3
   — Frons with a median tubercle. South China .......... *tuberifrons* sp. nov. (♂ unknown)

3(2). Concavity on frons shallower and without deepest hollow before median ocellus. Taiwan ........................................... *concavifrons* James (♂ unknown)
   — Concavity on frons deeper and with deepest hollow before median ocellus. South China ............................................................... *devexifrons* sp. nov. (♂ unknown)

*Formosolva concavifrons* (James)


We have examined 1♀ from Taiwan, which may belong to *concavifrons*. This species may be separated from *devexifrons* as shown in the key (2) (couplet 3).

Body length 12.5 mm, wing length 10.5 mm.

Male. Unknown.

Specimen examined. 1♀, Taihorin, Taiwan, iv. 1914, T. Shiraki.

Distribution. Taiwan.

Remarks. Frey (1960) wrote, “*Ceratosolva ichneumonea* unterscheidet sich von *concavifrons* u. a. durch die schwarzen Fühler, nur innen basal rötlich, das mit 3 schwarzen Längestreifen gezeichnete Mesonotum sowie durch die schwarze untere Hälfte der Pleuren und der schwarze Hintenrücken wie auch die beträchtliche Körpergröße. ......L. 14 mm, Fühlerlänge 4 mm. ......Burma: Kambaiti, 8. VI. 1934, 1♀ (R. Malaise)”
Formosolva devexifrons Yang et Nagatomi, sp. nov.
(Figs. 1, 8, 9–12)

Female. Body length 12.1 mm, wing length 10.6 mm. Head yellow and weakly pale grey pollinose; frons subshining, with deepest hollow before median ocellus. Hairs on head pale and yellow. Ocellar tubercle black. Head 1.3 times higher than long; width of one eye on a mid line in direct frontal view 0.7 times distance from antennae to median ocellus, 0.8 times width of frons just above antennae and 0.8 times width of face at lowest point in direct view.

Figs. 9–12. Formosolva devexifrons sp. nov., female genitalia [segment 2 of cercus is missing]. 9, Dorsal view; 10, ventral view; 11, sternite 8; 12, head of spermatheca.
frontal view; width of frons just above antennae 2.9 times width of ocellar triangle, 1.0 times width of frons at median ocellus and 1.0 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.1 times that from antennae to median ocellus. Antenna yellow, but outer surfaces of flagellomeres 1–5 brown to dark brown; scape and pedicel chiefly black haired, flagellum thickly white pollinose; antennal ratio c. 1: 0.3: 7.8; antenna 3.3 times as long as distance from antennae to median ocellus and 1.6 times as long as fore femur. Proboscis yellow with pale hairs. Palpus yellow with pale hairs, 0.6 times as long as distance from antennae to median ocellus; segment 2 longer and 1.3 times as long as segment 1.

Thorax yellow and weakly pale grey pollinose. Hairs on thorax yellow, but mesonotum and scutellum with some black hairs. Legs yellow; hairs on legs pale, but tarsi with some black hairs; hind femur 0.14 times as wide as long and 1.7 times as wide as hind tibia. Wing yellowish; veins yellowish brown to brown. Haltere yellow.

Abdomen yellow, dorsum (except sides) brown to dark brownish tinged; hairs on abdomen pale, but dorsum with some black hairs. Female genitalia (Figs. 9–12) [segment 2 of cercus is missing]: Lateral sclerite of tergite 9 wider than in *tuberifrons*; sternite 8 wider than in *tuberifrons* and with posterior margin rounded.

Male. Unknown.

Holotype ♀, Emeishan Mountain (1,120 m), Sichuan, 18. ix. 1978, Fasheng Li.

Distribution. China (Sichuan).

Remarks. This species is similar to *concavifrons* but may be separated from it as shown in the key (2) (couplet 3).
hairs); hairs on legs pale, but tarsi with some black hairs; hind femur 0.14 times as wide as long and 2.1 times as wide as hind tibia. Wing yellowish; veins yellowish brown to brown. In one wing vein between 2nd basal- and 4th posterior cells is absent but present in the other. Haltere yellow.

Abdomen yellow; dorsum may be brown to dark brown tinged; hairs on abdomen pale, but

Figs. 13–16. Formosolva planifrons sp. nov., female genitalia. 13, Dorsal view; 14, ventral view; 15, sternite 8; 16, head of spermatheca. C1, segment 1 of cercus; C2, segment 2 of cercus; GF, genital furca; S10, sternite 10; T9, tergite 9; T10, tergite 10.
dorsum with some black hairs. Female genitalia (Figs. 13–16): Tergite 10 very narrow; cercus with segment 1 rather thick, segment 2 slender and nearly as long as segment 1; sternite 8 wider than in *tuberifrons* and with a mid-posterior small concavity; lateral sclerite of tergite 9 narrow; genital furca with anterior bar thick and having anterior margin distinctly concave; head of spermatheca elliptical.

Male. Unknown.

Holotype ♂, Jinxiu, Guangxi, 15. vi. 1982, Yixing Zhao.

Distribution. China (Guangxi).

Remarks. This species may be separated from other species of the genus as shown in the key (2) (couplet 1).

*Formosolva tuberifrons* Yang et Nagatomi, sp. nov.

(Figs. 3, 4–5, 17–20)

Female. Body length 9.7 mm, wing length 8.8 mm. Head yellow and weakly pale grey pollinose; frons subshiny, with a median tubercle. Ocellar tubercle black. Hairs on head pale and yellow. Head 1.3 times higher than long; width of one eye on a mid line in direct frontal view 0.7 times distance from antennae to median ocellus, 0.9 times width of frons just above antennae and 0.9 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.6 times width of ocellar triangle, 1.0 times width of frons at median ocellus and 1.0 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.2 times that from antennae to median ocellus. Antenna yellow, but outer surfaces of flagellomeres 1–5 brown to dark brown; scape and pedicel chiefly black haired, flagellum thickly white pollinose; antennal ratio c. 1: 0.3: 7.4; antenna 3.7 times as long as distance from antennae to median ocellus and 1.7 times as long as fore femur. Proboscis yellow with pale hairs. Palpus yellow with pale hairs, 0.7 times as long as distance from antennae to median ocellus; segment 2 longer and 1.2 times as long as segment 1.

Thorax yellow and weakly pale grey pollinose. Hairs on thorax yellow, but mesonotum and scutellum with some black hairs. Legs yellow; hairs on legs pale, but tarsi with some black hairs; hind femur 0.14 times as wide as long and 1.8 times as wide as hind tibia. Wing yellowish; veins yellowish brown to brown. Haltere yellow.

Abdomen yellow, dorsum (except sides) with brown tinge; hairs on abdomen pale, but dorsum with some black hairs. Female genitalia (Figs. 17–20): Tergite 10 very narrow; cercus with segment 1 rather thick, segment 2 slender and slightly shorter than segment 1; sternite 8 narrower than in *devexifrons* and with a mid-posterior convexity; lateral sclerite of tergite 9 narrow; genital furca with anterior bar thick and having anterior margin weakly concave; head of spermatheca elliptical.

Male. Unknown.


Distribution. China (Guangxi).
Figs. 17–20. *Formosolva tuberifrons* sp. nov., female genitalia. 17, Dorsal view; 18, ventral view; 19, sternite 8; 20, head of spermatheca.

Remarks. This species (♀) is similar to *concavifrons* sp. nov. (♀) and *devexifrons* sp. nov. (♀), but may be distinguished from them by having the frons with a median tubercle.

**Genus *Solva* Walker**

For synonyms of *Solva*, see Nagatomi and Tanaka (1971). *Formosolva* James is revived in this paper as an independent genus.

Diagnosis. See key (1) to genera (couplets 1 and 2).

Distribution (number of species including new taxa). Palaearctic region (20 species, of which 2 species are also present in the Oriental region), Oriental region (about 50 species).

Figs. 21–27. Antennae of *Solva* spp., outer view. 21, *Solva apicimacula* sp. nov., female; 22, *S. crassifemur* sp. nov., female; 23, *S. dorsiflava* sp. nov., female; 24, *S. flavipilosa* sp. nov., male; 25, *S. gracilipes* sp. nov., female; 26, *S. kusigemati* sp. nov., male; 27, *S. mediomacula* sp. nov., female.
Nearctic region (5 species), Neotropical region (3 species), Australasian region (=Papua New Guinea, Solomons and Australia) (6 or 7 species) and Afrotropical region (5 species).

Remarks. The genus Solva contained about 70 previously known species from the world. Five species were known from China, i.e., *S. aurifrons* James, 1939, *S. marginata* (Meigen 1820), *S. nigricoxis* Enderlein, 1921, *S. schnitnikowi* Pleske, 1928, and *S. varia* (Meigen, 1820). Here 22 species from China are listed and 18 species are described or redescribed.

Among them 17 species appear to be new to science.

**Key (3) to Species of Chinese Solva (nigricoxis and marginata are not included)**

1. Thorax largely black; body smaller (5.4–11.0 mm); antenna 1.5–3.1 times as long as distance from antenna to median ocellus [in 5 of 18 species here examined, antennal flagellum is broken off and the length of antenna is unknown] .............................................................................................................. 2
   — Thorax largely yellow; body larger (13.0–14.0 mm); antenna 3.5 times as long as distance from antenna to median ocellus. South China ................
   ..........................................................................................tigrina sp. nov. (♀ unknown)
2(1). All coxae black (or brown to dark brown in clavata or only hind coxa black in shanxiensis) .................................................................................................................. 3
   — All coxae yellow ......................................................................................... 9
3(2). Mid-anterior or apical portion of wing darkened; mesopleuron without yellow upper band ................................................................. 4
   — Wing wholly pale; mesopleuron with yellow upper band ...................... 5
4(3). Mid-anterior portion of wing darker; antenna shorter than fore femur. South China.................................................................mediomacula sp. nov. (♀ unknown)
   — Apical portion of wing darker; antenna longer than fore femur. South China..................apicimacula sp. nov. (♀ unknown)
5(3). Apex or apical 1/2 of hind tibia brown to dark brown; base and sides of scutellum black ........................................................................ 6
   — Hind tibia yellow; scutellum (except sides) yellow ................................................ 8
6(5). All coxae black .......................................................................................... 7
   — Only hind coxa black. North China..............shanxiensis sp. nov. (♀ unknown)
7(6). Base of hind tarsomere 1 darkened; humerus yellow with anterior and posterior areas black. South China ................. yunnanensis sp. nov. (♀ unknown)
   — Apex of hind tarsomere 1 darkened; humerus black with outer area yellow.
   South China.................................................................hubensis sp. nov. (♀ unknown)
8(5). Coxae black; hind femur with black markings. South China .... crassifemur sp. nov.
   — Fore coxa dark brown, mid and hind coxae brown; hind femur wholly yellow.
   China..................................................................clavata sp. nov. (♀ unknown)
9(2). Hind tibia brown to dark brown at least on apical portion ....................... 10
   — Hind tibia yellow ....................................................................................... 13
10(9). Hind femur yellow ................................................................................... 11
   — Hind femur with apico-ventral surface black. North China..................
   ..........................................................................................mera sp. nov. (♀ unknown)
11(10). Hind tibia partly yellow ......................................................................... 12
   — Hind tibia wholly brown to dark brown. South China........................
   ....................................................................................gracilipes sp. nov. (♀ unknown)
12(11). Basal 2/5 of hind tibia yellow; abdominal tergite 1 with very narrow basal
membranous area. South China \textit{basiflava} sp. nov. (♀ unknown)

- Dorsal surface (except for basal 1/5 and apical 2/5) of hind tibia yellow; abdominal tergite 1 with large basal membranous area. South China \textit{dorsiflava} sp. nov. (♂ unknown)

13(9). Abdomen chiefly yellow or reddish yellow \hspace{1em} 14
- Abdomen chiefly black \hspace{1em} 17

14(13). Thorax black \hspace{1em} 15
- "Thorax yellow, the dorsum somewhat darker than the pleura; each mesopleuron with an irregular brownish black spot behind the front coxa;

mesonotum with an irregular brownish black area medianly behind the suture” (after James, 1939). Taiwan..........................aurifrons James (♀ unknown)

15(14). Only abdominal tergite 1 tinged with dark brown behind membranous area ........16
   — Abdominal tergite 2 with mid-basal margin black and tergites 3–7 with large black mid-basal spot. South China........................flavipilosa sp. nov. (♀ unknown)

16(15). Hind femur wholly yellow. South China .............................................uniflava sp. nov.
   — Hind femur with a long ventro-outer band black. South China 

17(13). Pteropleuron and metapleuron black; mesonotum (except for humerus chiefly or partly yellow) wholly black; hind femur with ventral teeth ..............18
   — Pteropleuron (at upper part) and metapleuron yellow; postero-lateral part of mesonotum yellow; hind femur without ventral teeth. North China; Europe

Figs. 41–46. Palpi of Solva spp., lateral view. 41, Solva gracilipes sp. nov., female; 42, S. hubensis sp. nov., female; 43, S. kusigemaii sp. nov., male; 44, S. mediomacula sp. nov., female; 45, S. mera sp. nov., male; 46, S. shanxiensis sp. nov., male.

18(17). Posterior margins of abdominal tergites yellow to yellow brown
— Abdominal tergites wholly black. South China
19
— Hind femur ventrally with a black stripe. South China
19(18). Hind femur wholly yellow. North China; Kazakhstan and Soviet Middle Asia
—

............................ *varia* (Meigen) (♂ not examined by us)

18(17). Posterior margins of abdominal tergites yellow to yellow brown
— Abdominal tergites wholly black. South China
19
— Hind femur ventrally with a black stripe. South China
19(18). Hind femur wholly yellow. North China; Kazakhstan and Soviet Middle Asia
—

*schnitnikowi* Pleske
*Solva apicimacula* **Yang et Nagatomi, sp. nov.**

(Figs. 21, 35, 53, 73–76)

Female. Body length 10.4–11.0 mm, wing length 10.3–10.5 mm. Head black, and pale grey pollinose; frons except narrow lower area just above antennae polished black. Head
Figs. 57–60. Hind femora and tibiae of Solva spp., anterior view. 57, Solva dorsiflava sp. nov., female; 58, S. flavipilosa sp. nov., male; 59, S. gracilipes sp. nov., female; 60, S. hubensis sp. nov., female.
Figs. 61–63. Hind femora and tibiae of *Solva* spp., anterior view. 61, *Solva kusigemati* sp. nov., male; 62, *S. mediomacula* sp. nov., female; 63, *S. mera* sp. nov., male.
with pale hairs, but bare on face and chiefly black haired on vertex and area just behind upper margin of eye. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.2 times distance from antennae to median ocellus, 1.4–1.6 times width of frons just above antennae and 1.2 times width of face at lowest point in direct frontal view;

Figs. 64–67. Hind femora and tibiae of Solva spp., anterior view. 64, Solva shanxiensis sp. nov., male; 65. S. sinensis sp. nov., male; 66, S. striata sp. nov., female; 67, S. tigrina sp. nov., female.
width of frons just above antennae 2.2–2.3 times width of ocellar triangle, 1.2 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4–1.5 times that from antennae to median ocellus. Antennal scape and pedicel black, flagellum blackish brown with inner surfaces of

Figs. 68–70. Hind femora and tibiae of Solva spp., anterior view. 68, Solva uniflava sp. nov., female; 69, S. varia (Meigen), female; 70, S. yunnanensis sp. nov., female.
flagellomeres 1–5 or 1–6 yellow; scape and pedicel black haired; antennal ratio c. 1: 0.6: 9.5.
Antenna 3.0–3.1 times as long as distance from antennae to median ocellus and 1.4 times as long as fore femur. Proboscis brownish to blackish with pale hairs. Palpus pale yellow except segment 1 and base of segment 2 dark brown, and with pale hairs; segment 2 being 1.3–1.4 times as long as segment 1; palpus ending far below antennae.

Thorax black, and pale grey pollinose; humerus yellow except for anterior and posterior areas black, scutellum yellow except for base and sides black. Thorax with pale hairs. Legs dark brown to black, but femora and hind tibia yellow except for apex and extreme base of femora, and apex of hind tibia dark brown to black; knees yellowish brown; hind femur 0.23 times as wide as long, 2.3 times as wide as hind tibia, and with one row of black ventral teeth; hairs on legs pale. Wing tinged with brown, with apical portion of wing and that of subcostal cell more or less darker; veins dark brown; vein between 2nd basal- and 4th posterior cell distinct but much shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen black, but posterior margins of sternites 2–7 narrowly pale. Dorsum with pale hairs, of which some may become black at middle; venter chiefly with black hairs. Female
Figs. 73–76. *Solva apicimacula* sp. nov., female genitalia. 73, Dorsal view; 74, ventral view; 75, sternite 8; 76, head of spermatheca.

genitalia (Figs. 73–76): Tergite 10 very narrow; cercus with segment 2 shorter; lateral sclerite of tergite 9 narrow; genital furca somewhat narrow apically, and with anterior bar more or less straight; head of spermatheca oval and with basal stem rather thick.

Male. Unknown.

Holotype ♀, Emeishan (1,800 m), Sichuan, 8. vii. 1957, Leyi Zheng. Paratype 1♀, Emeishan (1,983 m), Sichuan, 26. vii. 1957, Fuxing Zhu.

Distribution. China (Sichuan).

Remarks. This species is very similar to *formosipes* Frey from Burma, but may be separated from the latter in the following points: femora yellow except for extreme base tinged with blackish and apex black, apex of hind tibia black, hind femur with a row of
denticles from apex to base. In Frey's (1960) description of *formosipes*, the femora are
given as yellow with black about middle and on basal and apical rings, apical 1/4 of hind tibia
black, hind femur with one row of 10 denticles from middle to apex.

*Sulfa aurifrons* James

*Sulfa aurifrons* James, 1939, Arb. morph. taxon. Ent. Berl., 6: 31. Type locality: "Toa Tsui Kutsu",
Taiwan.

The original description of *aurifrons* is given below.

**Female.** A yellowish to brownish yellow species. Vertex, front, and face narrow, the ocellar
triangle and the bases of the antennae being separated from the eye only by very narrow frontal and
facial orbits; the face somewhat widened at the oral margin. Head black; the ground color, however, is
almost wholly concealed on the frontal orbits and on most of the face by dense silvery pollen, and on the
front by dense, appressed, golden pile; the occiput with yellowish pollen and rather dense yellow pile. 
Proboscis and palpi yellow; the palpi large, the apical segment of each inflated. Antennae about three
times as long as the head; the ten segments in ratio 4 : 3 : 12 : 9 : 10 : 8 : 10 : 8 : 7 : 10; their bases yellow, the
remainder (from the apex of the third segment exteriorly, and from the base of the fifth internally) 
blackish. Thorax yellow, rather densely clothed with short, yellow pile; the dorsum somewhat darker
than the pleura; each mesopleuron with an irregular brownish yellow spot behind the front coxa; the
mesonotum with an irregular brownish black area medially behind the suture: this area extends to and
includes the narrow base of the scutellum. Legs yellow, yellow-pilose; the hind coxae externally and the
hind femora below slightly brownish-yellow. Hind femora moderately inflated, their median diameter
being almost three times that of their tibiae, and armed below with an irregular row of short, blunt teeth. 
Haltere yellow, the knobs slightly infuscated. Wings yellow, the veins also yellow. Cross vein m-cu
distinct, almost as long as r-m. Abdomen yellow, the tergites, however, except their apices, brownish-
yellow; the pile yellow, except some black pile at the base of each segment dorsally. Length, 11.5 mm.

Holotype (by James), female, Toa Tsui Kutsu, Formosa, May 1914 (H. Sauter).

Distribution. Taiwan.

*Sulfa basilflava* Yang et Nagatomi, sp. nov.

**(Figs. 36, 54, 77–82)**

**Male.** Body length 8.6 mm, wing length 7.0 mm. Head black, and pale grey pollinose. 
Head with pale hairs, but bare on face and on long longitudinal frontal stripe and chiefly
black haired on upper occiput. Head 1.6 times higher than long; width of one eye on a mid
line in direct frontal view 1.2 times distance from antennae to median ocellus, 2.1 times width
of frons just above antennae and 1.6 times width of face at lowest point in direct frontal view;
width of frons just above antennae 1.7 times width of ocellar triangle. 1.3 times width of
frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view;
distance from ridge below proboscis to antennae 1.4 times that from antennae to median
ocellus. Antenna [flagellum missing] brown with black hairs; antennal ratio c. 1: 0.7: ?.
Proboscis yellowish brown with pale hairs; palpus yellow with pale hairs. segment 2 longer,
2.4 times as long as segment 1, but not extending to antennae.

Thorax black, and pale grey pollinose; humerus chiefly yellow except for antero-inner corner; scutellum yellow except for base and sides. Mesopleuron with yellow upper border. Hairs on thorax pale. Legs [mid tarsus and hind tarsomere 5 broken off] yellow, but hind tibia dark brown to black except for less than basal 1/2; apical portion of tarsi, and knee of hind leg darkened; hind femur 0.17 times as wide as long, 2.1 times as wide as tibia, and with two rows of yellow ventral teeth; hairs on legs pale. Wing nearly hyaline, veins dark brown; vein between 2nd basal- and 4th posterior cell distinct but much shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdominal dorsum black with lateral portions and posterior margins of tergites 2–5

Figs. 77–82. *Solva basiflava* sp. nov., male genitalia. 77, Tergite 8; 78, sternite 8; 79, tergite 9, sternite 10 and cerci, dorsal view; 80, tergite 9, sternite 10 and cerci, ventral view; 81, genital capsule, dorsal view; 82, genital capsule, ventral view. A, aedeagus; C, cercus; DL, dorsal lobe of gonocoxite; GC, gonocoxite; GS, gonostylus; I, interbasis; S10, sternite 10; T9, tergite 9; VFP, ventral fused portion of gonocoxites.
yellow; venter yellow. Membranous area on tergite 1 very narrow. Hairs on abdomen chiefly pale. Male genitalia (Figs. 77–82): Tergite 8 distinctly wider than long, with a large basal incision; sternite 8 longer than wide, with a trapezoid basal incision; tergite 9 longer than wide, rather quadrate; cercus very slender, nearly as long as tergite 9; sternite 10 abruptly widened basally; dorsal lobe of gonocoxite large and with postero-apical process stout; apical portion of gonocoxite with a short inner process bilobed apically; ventral gonocoxite long and narrow, with fused portion gently convex anteriorly; gonostylus short and entirely fused with gonocoxite at base; aedeagus rather thick and short, tapering toward apex, and without ventral tube; interbasis longer and tapering apically.

Female. Unknown.


Distribution. China (Yunnan).

Remarks. This species is very similar to *dorsiflava* sp. nov. and *gracilipes* sp. nov., but may be separated from them by having the hind femur more swollen (2.1 times as wide as tibia). In *dorsiflava* and *gracilipes*, the hind femur is less swollen (1.7–1.8 times as wide as tibia).

*Solva clavata* Yang et Nagatomi, sp. nov.

(Figs. 37, 55, 83–88)

Male. Body length 6.1 mm, wing length 5.8 mm. Head black, and pale grey pollinose. Hairs on head pale. Head 1.8 times higher than long; width of one eye on a mid line in direct frontal view 1.3 times distance from antennae to median ocellus, 2.1 times width of frons just above antennae and 1.6 times width of face at lowest point in direct frontal view; width of frons just above antennae 1.9 times width of ocellar triangle, 1.3 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.5 times that from antennae to median ocellus. Antenna [flagellum missing] black, chiefly with black hairs; antennal ratio c. 1: 0.9: ?. Proboscis yellow with pale hairs; palpus pale yellow with pale hairs, segment 2 longer and 1.8 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus yellow except for narrow anterior and posterior areas, scutellum except sides yellow. Mesopleuron with wide yellow upper border, and polished black lower portion. Hairs on thorax pale. Legs [fore leg except coxa and trochanter broken off] yellow, but coxae brownish to blackish; tarsomeres 2–5 more or less darkened; hairs on legs pale. Hind femur strongly swollen, 0.3 times as wide as long, 3.7 times as wide as hind tibia, and with two rows of ventral teeth black apically. Wing hyaline; veins brown; vein between 2nd basal- and 4th posterior cell distinct but much shorter than that between 2nd basal and discal cell. Haltere pale yellow.

Abdomen black, and pale grey pollinose; posterior margins of tergites 2–6 and sternites 2–5 yellow, sternite 1 yellow with posterior portion blackish, basal margin of sternite 2 also yellow. Hairs on abdomen pale. Male genitalia (Figs. 83–88): Tergite 8 wider than long,
Figs. 83–88. *Solva clavata* sp. nov., male genitalia. 83, Tergite 8; 84, sternite 8; 85, tergite 9, sternite 10 and cerci, dorsal view; 86, tergite 9, sternite 10 and cerci, ventral view; 87, genital capsule, dorsal view; 88, genital capsule, ventral view.

with a large trapezoid basal incision and a W-shaped apical incision; tergite 9 much longer than wide, with a trapezoid basal incision, with apex somewhat acute; sternite 8 widened at base and with apical margin rounded; cercus broad; sternite 10 rather trapezoid; gonocoxites with dorsal lobes nearly triangular and ventral fused portion concave anteriorly with an acute anterior median process; gonostylus wide and with acute tip; aedeagus narrower apically and rounded at both ends, and with a long and wide dorsal process; interbasis rather thick and long.

Female. Unknown.

Holotype ♂, China, 5. xii. 1948.
Distribution. China.

Remarks. This species is similar to *crassifemur* sp. nov., but may be separated from the latter by having the hind femur without black markings and the male genitalia with the cercus rather broad and aedeagus nearly quadrate with a long and wide dorsal process.

Figs. 89–94. *Solva crassifemur* sp. nov., male genitalia. 89, Tergite 8; 90, sternite 8; 91, tergite 9, sternite 10 and cerci, dorsal view; 92, tergite 9, sternite 10 and cerci, ventral view; 93, genital capsule, dorsal view; 94, genital capsule, ventral view.
**Solva crassifemur Yang et Nagatomi, sp. nov.**

(Figs. 22, 38, 56, 89-94, 95-98)

Male. Body length 6.7 mm, wing length 6.8 mm. Head black, and pale grey pollinose; frons shiny. Head with pale hairs, but bare on face; pile on frons dense and recumbent just above antennae and before median ocellus. Head 1.8 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 2.4 times width of frons just above antennae and 1.6 times width of face at lowest point in direct frontal view; width of frons just above antennae 1.9 times width of ocellar triangle, 1.2 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4 times that from antennae to median ocellus. Antennal scape [pedicel and flagellum missing] brown to dark brown with pale hairs. Proboscis yellow with pale hairs; palpus yellow with pale hairs, with segment 2 longer and 2.2 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus except narrow antero-inner area yellow, scutellum yellow. Mesopleuron with yellow upper border. Hairs on thorax pale. Legs [mid and hind legs except coxae and trochanters missing] with coxae and mid and hind trochanters black; fore leg yellow, but tarsus (except basal portion of tarsomere 1) darkened; hairs on legs pale. Wing hyaline, veins brown to dark brown; vein M₄ arising from discal cell. Haltere yellow.

Abdomen black, but posterior margins of tergites 3–4 pale. Hairs on abdomen chiefly pale. Male genitalia (Figs. 89–94): Tergite 8 wider than long, with a large basal incision and with apex narrower; sternite 8 trapezoid; tergite 9 much longer than wide, with a distinct basal incision; sternite 10 large and triangular; cercus rather short and obtuse apically; gonocoxites at apex with a dorsal hair tuft and with a short and wide inner ventral process; ventral fused portion of gonocoxites narrow; gonostylus longer than wide and acute at apex; aedeagus hexagonal and with a very slender ventral process; a ventral structure is present between gonocoxites and is composed of mid-anterior sclerite and paired lateral elongate membranes; there is a thin longitudinal sclerite before gonocoxite [its function is unknown to us].

Female. Body length 6.6–8.0 mm, wing length 5.7–7.3 mm. Similar to male except as follows: Head 1.6–1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.4–1.6 times distance from antennae to median ocellus, 2.2–2.3 times width of frons just above antennae and 1.5–1.7 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.1–2.4 times width of ocellar triangle, 1.3–1.5 times width of frons at median ocellus and 0.7–0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3–1.4 times that from antennae to median ocellus. Antenna dark brown, scape may have yellow tinge, pedicel and inner surface of flagellomeres 1–3 or 1–5 yellow; scape and pedicel chiefly black haired; antennal ratio c. 1: 0.9: 6.8. Antenna 1.5–1.7 times as long as distance from antennae to median ocellus and 0.7–0.75 times as long as fore femur. Legs yellow, but coxae and mid
and hind trochanters dark brown to black; base and tip, and apical ventro-outer longitudinal wide stripe of hind femur black; tarsomeres 2–5 somewhat darkened; hind femur strongly swollen, 0.30–0.33 times as wide as long, 3.2–3.4 times as wide as hind tibia, and with two rows of distinct black ventral teeth. (N=3). Vein between 2nd basal- and 4th posterior cell very short or arising from discal cell. Abdomen with narrow posterior margins of tergites 2–4 (or 2–5) pale. Female genitalia (Figs. 95–98): Tergite 10 very narrow and interrupted medially; cercus with segment 2 rather thin; lateral sclerite of tergite 9 narrow; genital furca with anterior bar nearly straight at anterior margin; head of spermatheca rather oval, and not longer than wide.

Figs. 95–98. Solva crassifemur sp. nov., female genitalia. 95, Dorsal view; 96, ventral view; 97, sternite 8; 98, head of spermatheca.
Holotype ♂, paratype 1 ♀, Emeishan Mountain (1,120 m), Sichuan, 18. ix. 1978, Fasheng Li. Paratypes 2 ♀ ♂, Jinping (400 m), Yunnan, 25. iv. 1956, Keren Huang; 1 ♂, Ruili (870 m), Yunnan, 14. vi. 1956, Tianyun Huang.

Distribution. China (Yunnan and Sichuan).

Remarks. This species is similar to *clavata* sp. nov., but may be separated from it by having the hind femur with black markings and the male genitalia with the cercus rather short and aedeagus hexagonal with a very slender ventral process.

_Solva dorsiflava_ **Yang et Nagatomi**, sp. nov.

(Figs. 23, 39, 57, 99–102)

Female. Body length 8.1–9.2 mm, wing length 7.3–9.0 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face, narrow area just above antennae, and shiny area just before ocellar triangle. Head 1.5 times higher than long; width of one eye on a mid line in direct frontal view 1.3–1.4 times distance from antennae to median ocellus, 1.5–1.7 times width of frons just above antennae and 1.4–1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.1–2.4 times width of ocellar triangle, 1.4–1.8 times width of frons at median ocellus and 0.7–0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.5–1.6 times that from antennae to median ocellus. Antenna dark brown, but inner surfaces of scape, pedicel and flagellomere 1 yellow; scape and pedicel black haired; antennal ratio c. 1: 0.9: 8.7. Antenna 3.0 times as long as distance from antennae to median ocellus and 0.9 times as long as fore femur. Proboscis brownish yellow with pale hairs; palpus pale yellow with pale hairs, segment 2 rather thick and 1.3–1.5 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus yellow, scutellum yellow except base and sides. Mesopleuron with yellow upper border and posterior portion; area just behind posterior base of mid coxa yellowish brown. Hairs on thorax pale. Legs yellow, but outer surface of hind coxa basally blackish tinged; hind tibia brown to dark brown with dorsal surface pale yellow except for base and less than apical 1/2; fore and mid tarsi dark brown except for tarsomere 1; hind femur 0.14 times as wide as long, 1.7 times as wide as hind tibia, and with three rows of ventral teeth pale yellow and very short; hairs on legs pale, fore and mid tarsi with some black hairs, hind tibia chiefly with black hairs except for pale area with pale hairs. Wing nearly hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell distinct but much shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen black, but lateral portion (wider posteriorly) and posterior margins of tergites 2–4 yellow and sternites 2–4 yellow. Hairs on abdomen pale, but dorsum chiefly with black hairs except for lateral portion only with pale hairs. Female genitalia (Figs. 99–102): Tergite 10 very narrow; cercus with segment 2 short and thick; lateral sclerite of tergite 9 large; genital furca wide, with anterior bar weakly concave at anterior margin; head of spermatheca with apical portion very slender and curved.
Male. Unknown.

Holotype ♀, paratype 1♀, Ruili, Yunnan, 5. v. 1981, Chi-kun Yang.

Distribution. China (Yunnan).

Remarks. This species is similar to *basiflava* sp. nov. and *gracilipes* sp. nov.. It may be separated from them by having the coloration of mesopleuron and hind tibia. Also, it may be separated from *basiflava* by having the hind femur less swollen, and from *gracilipes* by having the genital furca with wide anterior bar and spermatheca with very slender and curved apical portion.

*Solva flavipilosa* Yang et Nagatomi, sp. nov.

(Figs. 24, 40, 58, 103–108)

Male. Body length 7.9 mm, wing length 7.7 mm. Head black, and pale grey pollinose. Head with yellow hairs, but bare on face. Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.2 times distance from antennae to median ocellus, 2.2 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 1.8 times width of ocellar triangle, 1.3 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antennal scape and pedicel yellow, flagellum dark brown with inner surfaces of flagellomeres 1–3 yellow; scape and pedicel black haired; antennal ratio c. 1: 0.7: 5.8. Antenna 1.7 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis pale brownish yellow with pale hairs; palpus yellow with pale hairs, segment 2 longer and 2.3 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus yellow; scutellum yellow. Mesopleuron with yellow upper area which becomes wider before wing base; area behind mid coxae dark yellow. Hairs on mesonotum chiefly yellow and those on pleuron pale. Legs yellow, but base and tip (including knee) of hind femur blackish; hind femur 0.27 times as wide as long, 3.2 times as wide as hind tibia, and with two rows of black ventral teeth; hairs on legs yellow. Wing nearly hyaline, veins brown to dark brown. Haltere yellow.

Abdomen yellow, but tergite 2 with mid-basal margin black and tergites 3–7 with a large black median spot. Hairs on abdomen yellow. Male genitalia (Figs. 103–108): Tergite 8 much wider than long, with a large basal incision; sternite 8 as wide as long, wider basally and with a distinct basal incision; tergite 9 as wide as long; cercus rather large and obtuse apically; sternite 10 (except basal portion) triangular; gonocoxite with dorsal lobe narrow, distinctly curved and obtuse apically; gonostylus entirely fused with gonocoxite and with apex obtuse; ventral gonocoxites thinly fused with each other at inner base; strongly haired ventral membrane present between gonocoxites; interbasis thick and long and with apical portion darker; aedeagus tapering toward apex.

Female. Unknown.

Holotype ♂, Xishuangbanna (750 m), Yunnan, 1. vi. 1958, Chunpei Hong.
Figs. 99–102. *Solva dorsiflava* sp. nov., female genitalia. 99, Dorsal view; 100, ventral view; 101, sternite 8; 102, head of spermatheca.

Distribution. China (Yunnan).

Remarks. This species is somewhat similar to *uniflava* sp. nov. and *striata* sp. nov., but may be separated from them by having the abdominal coloration as shown in couplet 15 of the key (3).
**Solva gracilipes** YANG et NAGATOMI, sp. nov.
(Figs. 25, 41, 59, 109–112)

Female. Body length 9.3 mm, wing length 8.2 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face. Head 1.5 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus, 2.7 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 1.5 times width of ocellar triangle, 1.2 times

Figs. 103–108. *Solva flavipilosa* sp. nov., male genitalia. 103, Tergite 8; 104, sternite 8; 105, tergite 9, sternite 10 and cerci, dorsal view; 106, tergite 9, sternite 10 and cerci, ventral view; 107, genital capsule, dorsal view; 108, genital capsule, ventral view.
width of frons at median ocellus and 0.6 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antenna dark brown, but inner surfaces of scape, pedicel and flagellomere 1 (or 1–2) yellow to yellowish brown; scape and pedicel black haired; antennal ratio c. 1: 0.9: 8.7. Antenna 2.5 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis yellow to yellowish brown with pale hairs; palpus yellow with pale hairs, with segment 2 longer and 2.3 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus black; scutellum (except base and sides) yellow. Mesopleuron with a narrow yellow upper band; area behind base of mid coxa yellow to yellowish brown. Hairs on thorax pale; pteropleuron (behind upper part of

Figs. 109–112. *Solva gracilipes* sp. nov., female genitalia. 109, Dorsal view; 110, ventral view; 111, sternite 8; 112, head of spermatheca.
sternopleuron) with pile. Legs slender and yellow, but extreme tip of hind femur and hind tibia (except dorsal base), fore and mid tarsi, and hind tarsomeres 4–5 brown to dark brown; hind femur 0.13 times as wide as long and 1.8 times as wide as hind tibia, and with two rows of yellowish brown ventral teeth; hairs on legs pale. Wing nearly hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell very short. Haltere yellow.

Abdominal dorsum black with tergite 4 brownish, and lateral portions and posterior margins of tergites 2–4 yellow; venter yellow to yellowish brown. Hairs on abdomen pale, but dorsum with black hairs in middle. Female genitalia (Figs. 109–112): Tergite 10 very narrow and interrupted medially; cercus with segment 2 rather thin; lateral sclerite of tergite 9 large; genital furca with anterior bar protruded anteriorly; head of spermatheca very large and oval.

Male. Unknown.

Holotype ♀, Emeishan Mountain (760 m), Sichuan, 21. vi. 1955, Jinhua Li.

Distribution. China (Sichuan).

Remarks. This species is very similar to *basiflava* sp. nov, but may be separated from the latter by having the humerus wholly black, the hind tibia wholly brown to dark brown, and the hind femur less swollen.

*Solva hubensis* Yang et Nagatomi, sp. nov.

(Figs. 42, 60, 113–116)

Female. Body length 7.9 mm, wing length 7.3 mm. Head black, and pale grey pollinose; frons subshining except lower portion just above antennae where paired dense recumbent white pilose patches are present. Head with pale hairs, but bare on face. Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.1 times distance from antennae to median ocellus, 1.8 times width of frons just above antennae and 1.3 times width of face at lowest point in direct frontal view; width of frons just above antennae 1.8 times width of ocellar triangle, 1.2 times width of frons at median ocellus and 0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4 times that from antennae to median ocellus. Antenna [flagellum missing] dark brown to black, inner surfaces of segments 1–2 yellow, with black hairs; antennal ratio c. 1: 0.8 : ?. Proboscis largely yellow with pale hairs; palpus yellow with pale hairs, segment 1 dark brown, segment 2 longer and 2.0 times as long as segment 1.

Thorax black, and pale grey pollinose; outer area of humerus yellow, scutellum yellow on mid-posterior area which is wider than long. Mesopleuron with yellow upper border. Hairs on thorax pale. Legs yellow, but coxae, and mid and hind trochanters black; knee and one wide ventro-outer stripe (on apical half) of hind femur dark brown to black; mid tibia and apex of hind tibia slightly darker; apical portions of tarsi more or less darker; hind femur strongly swollen, 0.3 times as wide as long, 3.3 times as wide as tibia, and with two rows of black ventral teeth; hairs of legs pale. Wing nearly hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell absent or very short. Haltere yellow.
Abdomen black. Abdominal dorsum with black hairs except for lateral portion with pale hairs, venter chiefly with pale hairs. Female genitalia (Figs. 113–116): Tergite 10 very narrow and interrupted medially; cercus with segment 2 rather thin; lateral sclerite of tergite 9 narrow; genital furca with anterior bar thick, and straight at anterior margin; head of spermatheca oval and with basal stem rather thick.

Male. Unknown.

Holotype ♀, Wudangshan Mountain (1,100 m), Hubei, 3. vi. 1984, Xinli Wang.

Distribution. China (Hubei).

Remarks. This species is very similar to *yunnanensis* sp. nov., but may be separated from
the latter by having the humerus only with outer area yellow (in *yunnanensis*, the humerus yellow with anterior and posterior narrow areas black), the apex of hind tarsomere 1 darkened (in *yunnanensis*, the base of hind tarsomere 1 darkened), the mid tibia more or less darker, and the head of spermatheca oval (in *yunnanensis*, the head of spermatheca rather rectangular in lateral view).

**Solva kusigematii Yang et Nagatomi, sp. nov.**

(Figs. 26, 43, 61, 117-122, 123-125)

Male. Body length 6.3 mm, wing length 6.1 mm. Head black, and pale grey pollinose; frons shiny except for lower portion just above antennae where paired dense recumbent white pilose patches are present. Head pale haired, but bare on face. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus, 1.9 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.2 times width of ocellar triangle, 1.2 times width of frons at median ocellus and 0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna dark brown to black, but inner surfaces of pedicel and flagellomere 1 yellow; scape and pedicel black haired; antennal ratio c. 1: 0.9: 6.0. Antenna 1.8 times as long as distance from antennae to median ocellus and 0.6 times as long as fore femur. Proboscis pale yellow with pale hairs; palpus pale yellow with yellow hairs, with segment 2 longer and 1.5 times as long as segment 1; palpus ending far below antennae.

Thorax black, and pale grey pollinose; humerus with small outer area yellow; scutellum with yellow mid-posterior area which is wider than long. Mesopleuron with upper band yellow. Hairs on thorax pale. Legs yellow, but antero-lower area of mid coxa and extreme tip and apico-ventral margin of hind femur blackish; tarsomeres 2–5 more or less darker; hind femur 0.3 times as wide as long, 3.3 times as wide as hind tibia, and with distinct black ventral teeth whose rows become two on apical portion; hairs on legs pale. Wing nearly hyaline, veins dark brown; vein $M_4$ arising from discal cell. Halteres yellow.

Abdomen black. Hairs on abdomen pale and black. Male genitalia (Figs. 117–122): Tergite 8 wider than its mid length, and with a large and deep basal incision and apical portion narrower; sternite 8 rather trapezoid; tergite 9 trapezoid with a distinct basal incision; cercus tapering apically; gonocoxites with dorsal lobes having a slender postero-apical process and with ventral fused portion very narrow; gonocoxite acute apically; gonostylus wide and with dorsal posterior surface having strong hairs; aedeagus rather rhombic and with a slender ventral tube; a ventral structure present between gonocoxites and composed of mid-anterior sclerite and paired lateral long sclerites.

Female. Body length 7.3 mm, wing length 7.1 mm. Similar to male except as follows: Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 1.6 times width of frons just above antennae
Figs. 117–122. *Solva kusigemati* sp. nov., male genitalia. 117, Tergite 8; 118, sternite 8; 119, tergite 9, sternite 10 and cerci, dorsal view; 120, tergite 9, sternite 10 and cerci, ventral view; 121, genital capsule, dorsal view; 122, genital capsule, ventral view.

and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.2 times width of ocellar triangle, 1.5 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4 times that from antennae to median ocellus. Antenna 1.9 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Mid coxa without dark area. Hind femur 0.25 times as wide as long and 3.1 times as wide as hind tibia. Abdomen with posterior margins of sternites 1–3 yellow. Female genitalia
Figs. 123–125. *Solva kusigemati* sp. nov., female genitalia. 123, Dorsal view; 124, ventral view; 125, head of spermatheca.

(Figs. 123–125): Tergite 10 very narrow and interrupted medially; cercus with segment 2 shorter; lateral sclerite of tergtie 9 narrow; genital furca slightly contracted at base and with anterior bar straight at anterior margin; head of spermatheca rather quadrate in lateral view.


Distribution. China (Guangxi and Zhejiang).

Remarks. This species is similar to *flavoscutellaris* (MATSUMURA, 1915) from Japan, but differs in the leg coloration as follows: in *flavoscutellaris*, legs (except knee of hind leg and often apico-ventral margin of hind femur) wholly yellow; in *kusigemati*, tarsomeres 2–5 more or less darker. It may be easily separated from the latter by having the characters of male genitalia as shown in Figs. 117–122.

It is a pleasure to us and Professor Chi-kun Yang to name this species after Dr. K. KUSIGEMATI.

**Solva marginata** (MEIGEN)

(Figs. 126, 127–132)

The diagnosis and several illustrations are here copied from Rozkošný (1973).

A medium-sized species, with rather short strong antennae, a transverse head, and black, punctate mesonotum without yellow markings. Antennae dark brown, the inner basal part often yellowish. Legs yellow with coxae and tips of hind femora black, and often also tips of tibiae and usually tips of tarsi. Hind femora conspicuously swollen, bearing minute blackish tubercles below. Male genitalia: Epandrium almost oval, without surstyles, cerci small. Synsternite without ventral lobes, dististyles large. Aedeagus compact and relatively long.

Length: body 5.0–8.0 mm, wing 5.5–8.0 mm.

Distribution. North China; Europe, Siberia, Mongolia.

**Solva mediomacula** **Yang** et **Nagatomi**, sp. nov.

(Figs. 27, 44, 62, 133–136)

Female. Body length 6.6 mm, wing length 7.0 mm. Head black, and pale grey pollinose; frons shiny. Head with pale hairs, but bare on frons (except lateral margin) and face. Head 1.5 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus, 1.7 times width of frons just above antennae and 1.3 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.4 times width of frons at median ocellus and 0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4 times that from antennae to median ocellus. Antenna brown to dark brown, inner surfaces of pedicel and flagellomeres 1–2 brownish yellow; scape and pedicel black haired; antennal ratio c. 1: 0.7: 5.4. Antenna 2.0 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis brown to dark brown with pale hairs; palpus pale yellow with pale hairs, with segment 1 brown, segment 2, 2.1 times as long as segment 1; palpus not extending to antennae.

Thorax black, and pale grey pollinose; humerus black with mid-outer area yellowish brown to brown, scutellum brown to dark brown. Mesopleuron with narrow upper margin yellow
to brownish yellow. Hairs on thorax pale. Legs dark brown to black, but yellow on fore and mid trochanters, basal portions of femora (except extreme base of hind femur), dorsal surface of hind tibia at basal 1/2, and hind tarsus (except tarsomere 5 and base of tarsomere 1); hind femur 0.18 times as wide as long, 2.2 times as wide as hind tibia, and with two rows of black ventral teeth; hairs on legs pale. Wing hyaline, and tinged with brownish on mid-anterior area; veins brown to dark brown; vein between 2nd basal- and 4th posterior cell very short. Haltere yellow.

Abdomen largely dark brown to black. Hairs on abdomen pale, but dorsum with some black hairs except for lateral portions of tergites 1–5; venter with black hairs on apical portion. Female genitalia (Figs. 133–136): Tergite 10 very narrow and interrupted medially;
Figs. 133–136. *Solva mediomacula* sp. nov., female genitalia. 133, Dorsal view; 134, ventral view; 135, sternite 8; 136, head of spermatheca.

cercus with segment 2 rather thick; lateral sclerite of tergite 9 rather narrow (in dorsal view); genital furca with anterior bar thick, and straight at anterior margin; head of spermatheca large, rather oval, longer than wide and with basal stem thick.

Male. Unknown.

Holotype ♀, Emeishan Mountain (1,800–2,000 m), Sichuan, 21. viii. 1957, Fuxing Zhu.

Distribution. China (Sichuan).

Remarks. This species is similar to *freyi* Nagatomi 1975 (replacement name for *fascipennis* Frey), but may be separated from it by having the hind tibia dark brown except for basal 1/2 brownish yellow (in *freyi*, the hind tibia black with outer 1/2 with pale yellow
stripe), and the hind tarsus yellow with base of tarsomere 1 and entire tarsomere 5 brown to dark brown (in freyi, the hind tarsus yellow with tarsomere 1 brown to dark brown).

**Solva mera Yang et Nagatomi, sp. nov.**
(Figs. 45, 63, 137–142)

Male. Body length 6.0 mm, wing length 5.8 mm. Head black, and pale grey pollinose. Hairs on head pale; it appears that pile is dense just above antennae and before median

Figs. 137–142. *Solva mera* sp. nov., male genitalia. 137, Tergite 8; 138, sternite 8; 139, tergite 9, sternite 10 and cerci, dorsal view; 140, tergite 9, sternite 10 and cerci, ventral view; 141, genital capsule, dorsal view; 142, genital capsule, ventral view.
ocellar. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.1 times distance from antennae to median ocellus, 1.8 times width of frons just above antennae and 1.3 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.6 times width of ocellar triangle, 1.3 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antennal scape and pedicel [flagellum missing] black with black hairs; antennal ratio c. 1: 0.8: ?. Proboscis brownish yellow with pale hairs; palpus pale yellow with pale hairs, with segment 2 longer and 2.0 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus yellow except for anterior and posterior areas; scutellum (except sides) yellow. Mesopleuron with narrow yellow upper border (which becomes slightly wider before wing base). Hairs on thorax pale. Legs yellow, but hind coxa with a brown to dark brown tinge and knee of hind leg brown to dark brown; hind femur with apico-ventral portion black, about apical 1/2 of hind tibia black; fore and mid tarsomeres 2–5 (as well as apex of tarsomere 1) and hind tarsomere 5 darkened; hind femur 0.18 times as wide as long, 2.0 times as wide as hind tibia, and with two rows of black ventral teeth; hairs on legs pale. Wing nearly hyaline, veins brown to dark brown; vein M₄ arising from discal cell. Haltere yellow.

Abdomen black, but posterior margins of tergites 2–4 slightly tinged with brownish yellow. Hairs on abdomen pale. Male genitalia (Figs. 137–142): Tergite 8 as wide as long, with a large and deep basal incision; sternite 8 rather small and nearly triangular; tergite 9 nearly quadrate with a distinct basal incision; sternite 10 large and rather pentagonal; cercus short and rounded apically; gonocoxite without distinct dorsal lobe; apex of gonocoxite divided into two lobes which are obtuse apically, and outer lobe (=gonostylus) with a dorsal strong hair tuft near base; fused ventral gonocoxites point-like; a long V-shaped ventral sclerite present between gonocoxites; aedeagus large and concave basally, and with a long and curved ventral process; interbasis thick and somewhat acute apically.

Female. Unknown.
Holotype ♀. Qinlin, Shaanxi, 6. viii. 1962, Fasheng Li.
Distribution. China (Shaanxi).
Remarks. This species is similar to harmandi SÉGUY from the South Primorye, Kuril and Japan, but differs from it in the leg coloration as follows: in mera, hind tarsus yellow with base of tarsomere 1 and entire tarsomere 5 brown to dark brown, apico-ventral surface of hind femur black; in harmandi, hind tarsus brown to dark brown with tarsomere 1 (except apex) yellow, long ventral margin of hind femur black. It may be easily separated from the latter by having the characters of male genitalia as shown in Figs. 137–142.

Solva nigricoxis Enderlein

The original description of *nigricoxis* in comparison with *S. binghami* is given below.

Die unterschiede von *S. binghami* sind: Coxen und Trochanter schwarz, nur der Trochanter der Vorderbeine blass rostgelb. m$_2$ vollständig, am Ende ein wenig mit m$_1$ convergierend. Abdomen völlig schwarz, sehr schmale Hinterrandsäume des 2.–6. Tergites und Sternites blassgelblich, Endsegment mit den Cerci bei ♀ und ♂ rostgelb.

Körperlänge ♀ 8 mm, ♂ 6 1/4 mm.
Flügellänge ♀ 8 mm, ♂ 6 1/2 mm.
Sikkim. ♀ gesammelt von Bingham.
Formosa. Hoozan-Gebiet. Dorf Toa Tsui Kutsu. April 1914. 1 ♂ gesammelt von SAUTER. (Geschenk des Autors.)

**Distribution.** Taiwan; India.

**Solva schnitnikowi Pleske**

*Solva schnitnikowi* Pleske, 1928, Konowia, 7: 81. Type locality: "au defile de Gasford, au N. de Kopal, dans le Semiretschje", Kazakhstan.

A translation of the original description of *schnitnikowi* by Lindner (1936–38) is given below.


Nur 1 ♀ bekannt von Gasford im N. von Kopal in Semiretschje, 23. V. 1910 (W. Schnitnikow coll.). 5.5 mm.

**Distribution.** North China; Kazakhstan and Soviet Middle Asia.

**Solva shanxiensis Yang et Nagatomi, sp. nov.**

(Figs. 28, 46, 64, 143–148)

Male. Body length 6.3 mm, wing length 5.6 mm. Head black, and pale grey pollinose except for frons excluding narrow lower portion just above antennae and ocellar tubercle polishing black. Hairs on head pale. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.2 times distance from antennae to median ocellus, 2.5 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.0 times width of ocellar triangle. 1.4 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.5 times that from antennae to
median ocellus. Antennal scape and pedicel brown to dark brown, flagellum dark brown to black, with inner surfaces of scape, pedicel and flagellomere 1 yellow; scape and pedicel with black hairs; antennal ratio c. 1: 1: 9. Antenna 2.9 times as long as distance from antennae to median ocellus and 1.2 times as long as fore femur. Proboscis yellow with pale hairs; palpus pale yellow with pale hairs, with segment 2 longer and 1.9 times as long as segment 1; palpus ending far below antennae.

Thorax black, and pale grey pollinose; humerus yellow except for anterior and posterior narrow areas; scutellum (except base and sides) yellow. Mesopleuron with upper portion

Figs. 143–148. *Solva shanxiensis* sp. nov., male genitalia. 143, Tergite 8; 144, sternite 8; 145, tergite 9, sternite 10 and cerci, dorsal view; 146, tergite 9, sternite 10 and cerci, ventral view; 147, genital capsule, dorsal view; 148, genital capsule, ventral view.
yellow (becoming wider before wing base), and narrow lower portion more or less polished black; area behind base of mid coxa yellowish brown to brown. Hairs on thorax pale.

Legs yellow, but hind coxa and trochanter, base and apex (including knee) of hind femur, and apex of hind tibia dark brown to black; tarsomeres 4–5 or 3–5 more or less darker; hairs on legs pale. Hind femur thick, 0.23 times as wide as long, 3.7 times as wide as hind tibia, with two rows of black ventral teeth. Wing hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell distinct but much shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen black, and pale grey pollinose; posterior margins of tergites 2–6 narrowly yellow. Hairs on abdomen pale, but dorsum with some black hairs. Male genitalia (Figs. 143–148): Tergite 8 with a very large basal incision; sternite 8 wider basally, with a V-shaped basal incision; tergite 9 as wide as long, with a distinct basal incision; cercus large and rather quadrate; sternite 10 subtriangular; gonocoxite with distinct dorsal lobe; gonostylus entirely fused with gonocoxite and concave apically; ventral gonocoxites fused at postero-inner base; aedeagus tapering apically and without ventral tube; interbasis tapering toward apex, with a subapical outer spine.

Female. Unknown.


Distribution. China (Shanxi).

Remarks. This species is similar to *hubensis* sp. nov. and *yunnanensis* sp. nov., but may be separated from them by having the fore and mid coxae yellow and the palpus (Fig. 46) with segment 2 rather thick.

**Solva sinensis** **Yang et Nagatomi**, sp. nov.

(Figs. 29, 47, 65, 149–154, 155–158)

Male. Body length 5.4 mm, wing length 5.5 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 2.1 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.9 times width of ocellar triangle, 1.4 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antennal scape and pedicel yellow with outer surface dark brown and black haired [antennal flagellum missing]; antennal ratio c. 1: 0.9: ?. Proboscis yellow with pale hairs; palpus yellow with pale hairs, with segment 2 longer and 2.4 times as long as segment 1; palpus not extending to antennae.

Thorax black, and pale grey pollinose; humerus (except narrow antero-inner area) yellow; scutellum (except sides) yellow. Mesopleuron with yellow upper band; area behind base of mid coxa yellowish brown to brown. Hairs on thorax pale (upper part of pteropleuron with pale short pile). Legs [hind tarsus missing] yellow, but in hind femur extreme tip and
Figs. 149–154. *Solva sinensis* sp. nov., male genitalia. 149, Tergite 8; 150, sternite 8; 151, tergite 9, sternite 10 and cerci, dorsal view; 152, tergite 9, sternite 10 and cerci, ventral view; 153, genital capsule, dorsal view; 154, genital capsule, ventral view.

ventro-outer stripe (which does not extend to base) dark brown to black; apical portions of tarsi more or less darkened; hind femur 0.25 times as wide as long and 3.2 times as wide as tibia, and with two rows of black ventral teeth; hairs on legs pale. Wing nearly hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell much shorter than
that between 2nd basal- and discal cell. Haltere yellow.

Abdomen black, but posterior margins of tergites 2–5 and sides of tergites 3–7 yellow to yellowish brown and venter yellow to yellowish brown. Hairs on abdomen chiefly pale. Male genitalia (Figs. 149–154): Tergite 8 rather trapezoid with a large basal incision; sternite 8 with narrow apical portion; tergite 9 rather quadrate with a distinct basal incision; sternite 10 subtriangular with shallow basal incision; cercus rather broad; gonocoxite with dorsal lobe wide; gonostylus entirely fused with gonocoxite, obtuse apically, and with apical ventral sclerite; aedeagus wide with a slender apical process curved upward; interbasis thick.

Female. Body length 5.8 mm, wing length 5.9 mm. Similar to male except as follows:

Figs. 155–158. Solva sinensis sp. nov., female genitalia. 155, Dorsal view; 156, ventral view; 157, sternite 8; 158, head of spermatheca.
Pile on head yellow (this may be so in ♀). Head 1.5–1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.3–1.4 times distance from antennae to median ocellus, 1.9–2.0 times width of frons just above antennae and 1.3–1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.6 times width of frons at median ocellus and 0.7–0.75 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3–1.4 times that from antennae to median ocellus. Antenna 1.8–1.9 times as long as distance from antennae to median ocellus and 0.7–0.8 times as long as fore femur. Hind femur 0.24 times as wide as long and 2.9–3.0 times as wide as hind tibia. Vein between 2nd basal- and 4th posterior cell absent or point-like. Female genitalia (Figs. 155–158): Tergite 10 very narrow and interrupted medially; cercus with segment 2 short and thin; lateral sclerite of tergite 9 narrow; genital furca with anterior bar thick and straight at anterior margin; head of spermatheca extraordinarily long and obtuse apically.


Distribution. China (Yunnan and Guangxi).

Remarks. This species is similar to schnitnikowi Pleske, but may be separated from it by having the hind femur ventrally with a black stripe. In schnitnikowi, the hind femur is wholly yellow. It may be easily identified by having the head of spermatheca extraordinarily long.

**Solva striata** Yang et Nagatomi, sp. nov.

(Figs. 30, 48, 66, 159–162)

Female. Body length 8.7 mm, wing length 8.9 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face. Frons with a mid-lower longitudinal furrow. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 2.1 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.2 times width of ocellar triangle, 1.6 times width of frons at median ocellus and 0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antenna brown to dark brown, but inner surfaces of scape, pedicel and flagellomeres 1–6 yellow; scape and pedicel black haired; antennal ratio c. 1: 0.9: 6.3. Antenna 2.3 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis yellow with pale hairs; palpus pale yellow with pale hairs, with segment 2 longer and 2.2 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus (except anterior and posterior margins) yellow; scutellum (except base and sides) yellow. Mesopleuron with yellow upper band; area behind base of mid coxa yellowish brown. Hairs on thorax pale. Legs yellow, but hind femur with a long ventro-outer black stripe; tarsomeres 2–5 and apex of tarsomere 1
darkened; hind femur 0.22 times as wide as long, 2.8 times as wide as hind tibia, and with two rows of black ventral teeth; hairs on legs pale. Wing hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell point-like or arising from discal cell. Haltere yellow. 

Abdomen yellow to brownish yellow, but tergite 1 and basal margin of tergite 2 dark brown to black. Hairs on abdomen pale and black. Female genitalia (Figs. 159–162): Tergite 10 very narrow and interrupted medially; cercus with segment 2 rather long; lateral sclerite of tergite 9 narrow (in dorsal or ventral view) and longer; genital furca with anterior bar thick [anterior part of anterior bar is broken off]; head of spermatheca thick, obtuse apically, and longer than wide.

Male. Unknown.
Distribution. China (Guangxi).

Remarks. This species is very similar to *uniflava* sp. nov., but differs from the latter in leg coloration and the shape of spermatheca.

*Solva tigrina* Yang et Nagatomi, sp. nov.

(Figs. 31, 49, 67, 71, 163–166)

Female. Body length 13.0–14.0 mm, wing length 10.8–13.0 mm. Head black with pale grey pollinosity. Hairs on head yellow, and dense on frons and absent on face. Head 1.6–1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.4–1.5 times distance from antennae to median ocellus, 2.6 times width of frons just above antennae and 1.7–1.8 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.0 times width of ocellar triangle, 1.5 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.5–1.6 times that from antennae to median ocellus. Antenna yellow, but flagellomeres 5–8 black; scape and pedicel chiefly black haired; antennal ratio c. 1: 0.6: 12.6. Antenna 3.5 times as long as distance from antennae to median ocellus and 1.2 times as long as fore femur. Proboscis yellow with pale hairs; palpus yellow with pale hairs and 1.3 times as long as distance from antennae to median ocellus, with segment 2 longer and 1.6–1.8 times as long as segment 1.

Thorax yellow and weakly pale grey pollinose; mesonotum with one median longitudinal blackish stripe which becomes paler toward anterior margin; scutellum with basal margin and sides dark brown; meso-, meta-, pteropleuron and sides of mesonotum may have dark brown tinge. Hairs on thorax yellow. Legs yellow, but hind femur with ventral portion brownish yellow on basal 1/4 and apical half; hind femur 0.23–0.24 times as wide as long and 2.6–2.7 times as wide as hind tibia. Wing yellowish, veins yellowish brown to brown; vein between 2nd basal- and 4th posterior cell distinct but shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen yellow with dark brown to black transverse basal band on tergites 1–6; sternites 4–6 may have brown to dark brown tinge. Hairs on abdomen pale, but dorsum with some black hairs. Female genitalia (Figs. 163–166): Tergite 10 very narrow; cercus with segment 1 rather thick, segment 2 slender and somewhat shorter than segment 1; lateral sclerite of tergite 9 wide; sternite 8 quadrate, with mid-posterior knob; genital furca with anterior bar large and protruded posteriorly; head of spermatheca large, semicircular and concave basally, with short and rather thick stem.

Male. Unknown.


Distribution. China (Guangxi and Fujian).
Remarks. This species may be separated from other known Chinese species of the genus by having the thorax and abdomen largely yellow, body larger, and antenna longer.

**Solva uniflava** Yang et Nagatomi, sp. nov.
(Figs. 32, 50, 68, 167–172, 173–176)

Male. Body length 9.3 mm, wing length 8.9 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face; lower frons with paired white recumbent pilose
patches. Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.2 times distance from antennae to median ocellus, 1.9 times width of frons just above antennae and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.0 times width of ocellar triangle, 1.3 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4 times that from antennae to median ocellus. Antenna brown to dark brown, but inner surfaces of scape, pedicel and flagellomeres 1–5 (or 1–7) yellow; scape and pedicel black haired; antennal ratio $c. 1: 0.8: 6.7$. Antenna 2.1 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis yellow with

Figs. 167–172. Solva uniflava sp. nov., male genitalia. 167, Tergite 8; 168, sternite 8; 169, tergite 9, sternite 10 and cerci, dorsal view; 170, tergite 9, sternite 10 and cerci, ventral view; 171, genital capsule, dorsal view; 172, genital capsule, ventral view.
brown tinge and with pale hairs; palpus pale yellow with pale hairs, with segment 2 longer and 2.5 times as long as segment 1; palpus nearly extending to antennae.

Thorax black, and pale grey pollinose; humerus yellow; scutellum (except sides) yellow. Mesopleuron with yellow upper band; pteropleuron with upper margin yellow; area behind base of mid coxa yellow to yellowish brown. Hairs on thorax pale. Legs yellow; hind femur 0.22 times as wide as long, 2.7 times as wide as hind tibia, and with two rows of black ventral teeth; hairs on legs pale. Wing nearly hyaline, and slightly tinged with yellowish; veins brown; vein between 2nd basal and 4th posterior cell much shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen yellow to yellowish brown, but tergite 1 with raised brown to dark brown bands behind concave patch. Hairs on abdomen chiefly pale. Male genitalia (Figs. 167–172): Tergite 8 large with a large trapezoid basal incision, its apical portion narrow; sternite 8 tapering apically and rounded at apex; tergite 9 nearly as wide as long, with a deep basal incision; sternite 10 triangular; cercus with obtuse apex; gonocoxite with dorsal lobe long and clavate, with ventral fused portion having a trapezoid basal incision and a mid-apical process; gonostylus entirely fused with gonocoxite; gonostylus and apical portion of gonocoxite densely haired; aedeagus large, rather cross-shaped, and with a slender and curved ventral process; interbasis thick.

Female. Body length 9.3 mm, wing length 9.2 mm. Similar to male except as follows: Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.2 times distance from antennae to median ocellus, 1.6 times width of frons just above antennae and 1.1 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.2 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antenna 2.8 times as long as distance from antennae to median ocellus and 0.87 times as long as fore femur. Proboscis wholly yellow. Female genitalia (Figs. 173–176): Tergite 10 very narrow and interrupted medially; cercus [segment 2 missing] with segment 1 rather broad and nearly rectangular; lateral sclerite of tergite 9 narrow (in dorsal or ventral view); genital furca with anterior bar weakly concave at anterior margin; head of spermatheca very large and consisting of three layers.

Holotype ♂, Tongshan (1,550 m), Hubei, 13. vi. 1984, Xinli WANG. Paratype 1♀, Jianyang (720–950 m), Fujian, 30. iv. 1960, Yiran ZHANG.

Distribution. China (Hubei and Fujian).

Remarks. This species is similar to striata sp. nov., but may be separated from it by having the character given in couplet 16 of the key (3).

_Solva varia_ (Meigen)

(Figs. 33, 51, 69, 72, 177–180)

*Xylophagus varius* Meigen, 1820, Syst. Beschr., 2: 14. Type localities: “Gegend von Paris; Oester-
Female. Body length 5.6–6.0 mm, wing length 5.0–5.9 mm. Head black, and pale grey pollinose; median area of frons (excluding narrow lower portion) shining. Hairs on head pale; lower frons with paired white recumbent pilose patches. Head 1.5–1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.1 times distance from antennae to median ocellus, 1.6–1.7 times width of frons just above antennae and 1.1–1.2
times width of face at lowest point in direct frontal view; width of frons just above antennae 1.8–2.0 times width of ocellar triangle, 1.2–1.4 times width of frons at median ocellus and 0.6–0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.4–1.5 times that from antennae to median ocellus. Antenna brown to dark brown, but inner surfaces of scape, pedicel and flagellomeres 1–3 yellow; scape and pedicel with black hairs; antennal ratio c. 1: 0.7: 12. Antenna 2.6–2.7 times as long as distance from antennae to median ocellus and 1.2–1.3 times as long as fore femur. Proboscis yellow with pale hairs; palpus pale yellow with pale hairs, with segment 2 longer and 1.9–2.0 times as long as segment 1. (N=4).

Thorax black and pale grey pollinose with the following parts yellow: humeral and postalar

Figs. 177–180. Solva varia (Meigen), female genitalia. 177, Dorsal view; 178, ventral view; 179, sternite 8; 180, head of spermatheca.
calli; scutellum; lateral (except area before suture) and posterior (except thin mid portion) borders of mesonotum; upper and posterior parts of mesopleuron; ptero- (except lower part), hypo- and metapleuron. Hairs on thorax pale. Legs yellow, but hind tarsus brownish; hairs on legs pale. Hind femur 0.18 times as wide as long, 1.7–1.8 times as wide as hind tibia, and with two rows of yellow ventral teeth. Wing hyaline, veins brown; vein between 2nd basal- and 4th posterior cell as long as or somewhat shorter than that between 2nd basal- and discal cell. Haltere yellow.

Abdomen black with venter brown. Hairs on abdomen pale. Female genitalia (Figs. 177–180): Tergite 10 narrow and interrupted medially; cercus with segment 2 rather thick; sternite 10 with a median longitudinal desclerotized vitta; lateral sclerite of tergite 9 rather large; genital furca with anterior bar weakly concave at anterior margin; head of spermatheca oval and deeply concave at base.

Male. No material available.


Distribution. China (Beijing and Ningxia); Europe.

Remarks. This species is easily distinguished from other Chinese species of the genus by having the peculiar thorax marking, and hind femur without ventral teeth.

**Solva yunnanensis** Yang et Nagatomi, sp. nov.

(Figs. 34, 52, 70, 181–184)

Female. Body length 5.4 mm, wing length 6.2 mm. Head black, and pale grey pollinose. Head with pale hairs, but bare on face and polished median area (except for lateral margins) of frons. Head 1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.3 times distance from antennae to median ocellus, 2.0 times width of frons just above antennae and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.4 times width of frons at median ocellus and 0.7 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.3 times that from antennae to median ocellus. Antenna brown to dark brown, pedicel brown, inner surfaces of flagellomeres 1–2 paler; scape and pedicel black haired; antennal ratio c. 1: 1: 5.1. Antenna 1.8 times as long as distance from antennae to median ocellus and 0.7 times as long as fore femur. Proboscis chiefly yellow with pale hairs; palpus yellow with pale hairs, with segment 1 brown to dark brown, with segment 2 longer and 2.1 times as long as segment 1.

Thorax black, and pale grey pollinose; humerus (except anterior and posterior areas) yellow; scutellum (except base and sides) yellow. Mesopleuron with yellow upper band; area behind base of mid coxa yellowish brown to brown. Hairs on thorax pale. Legs yellow, but coxae, mid and hind trochanters black and fore trochanter brown; hind femur with base, tip including knee and ventro-outer stripe on apical half dark brown to black; fore
tarsus, mid tarsomeres 2–5 (including apex of tarsomere 1), and hind tarsomeres 2–5 (including apex and base of tarsomere 1) brown to dark brown; hind femur 2.8 times as wide as long, 3.5 times as wide as hind tibia, and with one row of black ventral teeth; hairs on legs pale. Wing nearly hyaline, veins brown to dark brown; vein between 2nd basal- and 4th posterior cell point-like. Haltere yellow.

Abdomen black, but venter brownish. Hairs on abdomen pale and black. Female genitalia (Figs. 181–184): Tergite 10 very narrow and interrupted medially; cercus with segment 2 thin; lateral sclerite of tergite 9 narrow; genital furca with anterior bar gently concave at anterior margin; head of spermatheca rather rectangular in lateral view.

Figs. 181–184. *Solva yunnanensis* sp. nov., female genitalia. 181, Dorsal view; 182, ventral view; 183, sternite 8; 184, head of spermatheca.
Male. Unknown.

Holotype ♀, Xishuangbanna (650 m), Yunnan, 13. iv. 1958, Chunpei Hong.

Distribution. China (Yunnan).

Remarks. This species is similar to *hubensis* sp. nov., but differs from it in the following points: hind tarsomere 1 with base brown to dark brown, humerus black with outer area yellow; head of spermatheca rather rectangular.

Figs. 185–195. Palpi of *Xylomya* spp., lateral view. 185 (♀)–186 (♂), *X. alamaculata* sp. nov.; 187 (♀)–188 (♀), *X. chekiangensis* (Ōuchi); 189 (♀), *X. decor*a sp. nov.; 190 (♀), *X. gracilicorpus* sp. nov.; 191(♀)–192 (♀), *X. moiwana* Matsumura; 193 (♀), *X. sichuanensis* sp. nov.; 194 (♀)–195 (♀), *X. sinica* sp. nov.
Genus *Xylomya* Rondani


For synonyms of *Xylomya*, see Nagatomi and Tanaka (1971).

Diagnosis. See key (1) to genera (couplet 1).

Distribution (number of species including new taxa). Palaearctic region (19 species), Oriental region (5 species), Nearctic region (8 species, of which 1 species extends to the Neotropical region), Neotropical region (4 species).

Remarks. The genus *Xylomya* contained 30 known species from the world. Four species were previously known from China, i.e., *X. chekiangensis* (Ouchi, 1938), *X. longicornis* Matsumura, 1915, *X. moiwana* (Matsumura, 1915) and *X. sauteri* (James, 1939). Here 9 species are recorded from China. Among them 5 species are described as new to science.

**Key (4) to Species of Chinese Xylomya**

1. Antenna 1.5–3.0 times as long as distance from antennae to median ocellus ........ 2
— Antenna over 5 times as long as distance from antennae to median ocellus.
   North China; E. Siberia (South Primorye), Japan ........... *longicornis* Matsumura

2(1). Thorax and abdomen chiefly yellow with dark markings or thorax wholly yellow ............................................................ 3
— Thorax and abdomen largely or wholly dark brown to black ...................... 5

3(2). Thorax with darker markings ....................................................... 4
— Thorax wholly yellow; face yellow (after James, 1939). Taiwan ...... *sauteri* (James)

4(3). Face dark brown; darker markings on mesonotum distinct, with median stripe having mid-anterior yellow vitta and with two lateral spots extending to lateral margin; ptero- (except upper part) and hypopleuron darkened.
   South China ................................................................. *decora* sp. nov. (♀ unknown)
— Face yellow; darker markings on mesonotum indistinct (paler than in *decora*) and with lateral spots not extending to lateral margin; ptero- and hypopleuron wholly (or almost wholly) yellow. South China ...... *chekiangensis* (Ouchi)

5(2). Thorax and abdomen black with yellow markings; wing without black median spot ............................................................... 6
— Thorax and abdomen wholly black; wing with one wide black median spot.
   South China ................................................................. *alamaculata* sp. nov.

6(5). Mesonotum without yellow median longitudinal stripes .................... 7
— Mesonotum with one pair of yellow narrow median longitudinal stripes ...... 8

7(6). Hind tarsomere 1 yellow at basal portion; coxae black. North China; E. Siberia (South Primorye), Kuril (Kunashiri Island), Japan ..................
   ................................................................. *moiwana* Matsumura
— Hind tarsomere 1 wholly black; coxae yellow. North China ......................

8(6). Hind tarsomeres 1–3 yellow; metapleuron black with yellow spot or wholly black; wing with darkened apical portion. North and South China ..............

Xylomya alamaculata Yang and Nagatomi, sp. nov.
(Figs. 185–186, 201, 202–207, 208–211)

Male. Body length 12.9 mm, wing length 12.6 mm. Head black, and pale grey pollinose
except for frons just above antennae with a brown tinge. Hairs on head pale; frons with area before ocellar tubercle and area just above antennae shiny and bare. Head 1.4 times higher than long; width of one eye on a mid line in direct frontal view 1.3 times distance from antennae to median ocellus, 1.7 times width of frons just above antennae and 1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.7 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna dark brown, but inner surfaces of pedicel and flagellomeres 1–3 yellowish brown to brown; scape and pedicel chiefly with black hairs; antennal ratio c. 1: 0.7: 4.3; antenna 2.1 times as long as distance from antennae to median ocellus. Proboscis partly dark brown with pale hairs. Palpus dark brown except for apical portion largely yellowish brown, with pale hairs; palpus obtuse apically, 1.1 times as long as distance from antennae to median ocellus, 0.4 times wider than long.

Fig. 201. *Xylomya alamaculata* sp. nov., male wing.

Thorax dark brown to black, and pale grey pollinose, but mesopleuron shiny on mid-lower portion; area just behind sternopleuron yellowish brown to brown. Hairs on thorax pale. Legs dark brown to black, but knees, dorso-basal portions of tibiae, and fore and mid trochanters yellow; hairs on legs pale, but tarsi with black hairs. Wing hyaline with one wide black median spot; veins brown to dark brown. Haltere yellow, with ventral surface of knob black.

Abdomen black, and pale grey pollinose. Hairs on abdomen pale, but dorsum with some black hairs. Male genitalia (Figs. 202–207): Tergite 9 with short apico-lateral process; cercus rather quadrate, longer than wide; sternite 10 consisting of one middle process (which is wider and slightly longer than apical portion of lateral processes) and two lateral processes (which are slightly curved inwards apically); sternite 8 divided into two large lobes which are rather quadrate; gonocoxite with dorsal lobe rectangular at apical portion, and with apical inner dorsal process, and with ventral fused portion having a quadrate basal incision and a largely membranous apical lobe (which is concave medially); gonostylus broad in ventral view; aedeagus strongly curved with a short dorso-basal process, which is somewhat curved; interbasis very long and obtuse apically.

Female. Body length 12.6 mm, wing length 11.8 mm. Similar to male except as follows: Head 1.3 times higher than long; width of one eye on a mid line from a direct frontal view 1.2
Figs. 202–207. *Xylomya alamaculata* sp. nov., male genitalia. 202, Tergite 9, sternite 10 and cerci, dorsal view; 203, tergite 9, sternite 10 and cerci, ventral view; 204, tergite 8; 205, sternite 8; 206, genital capsule, dorsal view; 207, genital capsule, ventral view. LP, lateral process of sternite 10; MP, middle process of sternite 10.

times distance from antennae to median ocellus, 1.4 times width of frons just above antennae and 1.3 times width of face at lowest point from a direct frontal view; width of frons just above antennae 2.7 times width of ocellar triangle, 1.8 times width of frons at median ocellus and 0.9 times width of face at lowest point from a direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna with inner surfaces of pedicel and flagellomeres 1–7 brownish yellow; antenna 2.1 times as long as distance from antennae to median ocellus. Palpus 0.8 times as long as distance from antennae to median ocellus, 0.45 times wider than long. Female genitalia (Figs. 208–211):
Sternite 8 rather pentagonal, with mid-posterior part desclerotized; tergite 10 very narrow; cercus with segment 1 nearly as wide as long, and segment 2 short and rounded apically; tergite 9 undivided and thin medially; genital furca with anterior bar large and rather triangular and with lateral bar thin; head of spermatheca long and tapering toward apex.

Figs. 208–211. *Xylomya alamaculata* sp. nov., female genitalia. 208, Ventral view; 209, dorsal view; 210, sternite 8; 211, head of spermatheca.
Holotype ♂, paratype 1♀, Emeishan Mountain (1,800–1,900 m), Sichuan, 8. vii.–5. viii. 1957, Keren Huang and Fuxing Zhu.

Distribution. China (Sichuan).

Remarks. This species is very distinctive and is easily separated from other known Chinese species of the genus by having the body wholly black and the wing with one wide black median spot.

*Xylomya chekiangensis* (Ôuchi)
(Figs. 187–188, 196, 212–217, 218–221)


Male. Body length 12.4–13.0 mm, wing length 11.1–12.4 mm. Head dark brown to black, and pale grey pollinose; frons just above antennae and face yellow; ocellar tubercle and frons (except area above antennae) subshiny. Hairs on head golden yellow; frons just above antennae with paired white tomentose patches, and median area of frons above antenna bare. Head 1.5–1.7 times higher than long; width of one eye on a mid line in direct frontal view 1.4–1.5 times distance from antennae to median ocellus, 1.4 times width of frons just above antennae and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.2–2.4 times width of ocellar triangle, 1.4 times width of frons at median ocellus and 1.0 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.5 times that from antennae to median ocellus. Antenna yellow; scape and pedicel with yellow hairs; antennal ratio c. 1: 0.9: 7.2; antenna 1.7 times as long as distance from antennae to median ocellus. Proboscis yellow with pale hairs. Palpus yellow with pale hairs; palpus rather acute apically, 1.0–1.2 times as long as distance from antennae to median ocellus, 0.3 times wider than long.

Thorax yellow and weakly pale grey pollinose; mesonotum with three broad somewhat darker longitudinal stripes, and with a lateral thin and short black stripe just behind suture; scutellum with basal margin black. Mesopleuron with an oblique narrow brown spot, sternopleuron with some anterior portion brown. Hairs on thorax yellow, but scutellum and postero-lateral portions of mesonotum with black hairs. Legs yellow; tarsomeres 2–5 (including apex of tarsomere 1), mid tibia (except base), and base and apical portion of hind femur brown (or somewhat darker); hairs on legs pale, but femora with black hairs. Wing yellowish; veins yellowish brown to brown. Haltere yellow.

Abdomen yellow and weakly pale grey pollinose, but tergite 1 with narrow dark brown transverse band on anterior margin, tergites 3–5 with narrow dark brown band on posterior margin, and sternite 1 black except for median area. Hairs on abdomen chiefly black. Male genitalia (Figs. 212–217): Tergite 9 with long apico-lateral process; cercus rather quadrate, longer than wide; sternite 10 quadrate with posterior margin having long middle process and two very short lateral convexities; sternite 8 deeply incised apically; gonocoxite with dorsal lobe pointed at anterior inner apex, with ventral fused portion having a trapezoid
basal incision; gonostylus more or less acute apically, with an inner process slender and curved; aedeagus long and thick with apical portion thin and strongly curved; interbasis rather long with apical portion thin and slightly curved outward.

Female. Body length 14.9 mm, wing length 14.1 mm. Similar to male except as follows: Head 1.5 times higher than long; width of one eye on a mid line from a direct frontal view 1.3 times distance from antennae to median ocellus, 1.4 times width of frons just above antennae and 1.4 times width of face at lowest point from a direct frontal view; width of frons just
above antennae 2.5 times width of ocellar triangle, 1.3 times width of frons at median ocellus and 1.0 times width of face at lowest point from a direct frontal view; distance from ridge below proboscis to antennae 1.5 times that from antennae to median ocellus. Antenna 1.6 times as long as distance from antennae to median ocellus. Palpus as long as distance from antennae to median ocellus, 0.35 times wider than long. Female genitalia (Figs. 218–221): Sternite 8 wider than long, with anterior part narrower; tergite 10 reduced and T-shaped;

Figs. 218–221. Xylomya chekiangensis (Ouchi), female genitalia. 218, Ventral view; 219, dorsal view; 220, sternite 8; 221, head of spermatheca.
cercus with segment 1 distinctly longer than wide, somewhat tapering toward apex, and segment 2 shorter and somewhat rounded apically; lateral sclerite of tergite 9 narrow (in dorsal or ventral view); genital furca with anterior bar wide and straight anteriorly, and with lateral bar wide; head of spermatheca very long, with apex somewhat acute.

Specimens examined. 1♀, Emeishan Mountain (600 m), Sichuan, 30. iv. 1957, Leyi ZHENG; 1♀, Emeishan Mountain (800–1,000 m), Sichuan, 29. v. 1957, Keren HUANG; 1♂, Xianning, Hubei, 16. vi. 1984, Xinli WANG.

Distribution. China (Hubei, Sichuan and Zhejiang).

Remarks. This species was originally described by ŌUCHI (1938), based on the female from Zhejiang. The male is here described for the first time.

Xylomya decor a Y A N G e t N AGATOM I, sp. nov.
(Figs. 189, 197, 222–225)

Female. Body length 10.9 mm, wing length 10.2 mm. Head dark brown to black, and pale grey pollinose except for frons just above antennae yellow. Hairs on head yellow. Head 1.5 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 1.9 times width of frons just above antennae and 1.7 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.2 times width of ocellar triangle, 1.1 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna yellow; scape and pedicel with yellow hairs; antennal ratio c. 1: 0.8: 5.6; antenna 2.2 times as long as distance from antennae to median ocellus. Proboscis yellow with pale hairs. Palpus yellow with pale hairs; palpus rounded apically, 1.1 times as long as distance from antennae to median ocellus, 0.4 times wider than long.

Thorax yellow, and pale grey pollinose. Mesonotum with one black median longitudinal stripe (which is widely divided on anterior portion) and two pairs of black lateral spots (of which the posterior ones behind suture are connected with median band); scutellum with basal margin black; postscutellum brown to dark brown. Mesopleuron with one dark brown oblique spot; pteropleuron (except antero-upper part and patch just behind sternopleuron), hypopleuron and anterior part of sternopleuron dark brown. Hairs on thorax yellow, but scutellum chiefly with black hairs. Legs [hind tibia and tarsi missing] yellow, but tarsomeres 2–5 and apical portion of tarsomere 1 darkened; hairs on legs yellow, but tarsi with some black hairs. Wing nearly hyaline; veins brown to dark brown. Haltere yellow.

Abdomen yellow and weakly pale grey pollinose, but tergite 1 with black transverse band on anterior margin and tergites 2–5 with one blackish transverse band on posterior margin (except sides). Hairs on abdomen yellow, but dorsum with some black hairs. Female genitalia (Figs. 222–225): Sternite 8 with mid-posterior convexity and with anterior margin straight; tergite 10 very narrow; cercus with segment 1 distinctly longer than wide and distinctly tapering toward apex, and segment 2 short and thin; tergite 9 undivided and with
Figs. 222–225. *Xylomya decora* sp. nov., female genitalia. 222, Ventral view; 223, dorsal view; 224, sternite 8; 225, head of spermatheca.

anteri margin concave; genital furca with anterior bar narrow and long, and with lateral bar rather wide; head of spermatheca rather spherical.

Male. Unknown.

Holotype ♀, Shennongjia (1,600 m), Hubei, 13. vii. 1980, Xiaoyuan Mao.

Distribution. China (Hubei).

Remarks. This species is very similar to *shikokuana* (Miyatake) from Japan, but differs from the latter as follows: the frons just above antennae yellow, the anterior pairs of lateral spots on mesonotum not connected with median longitudinal band, the oblique spot on
mesopleuron not reaching its anterior margin, and the apex of hind femur yellow. In *shikokuana*, the frons wholly black, the anterior pairs of lateral spots on mesonotum connected with median longitudinal band, the oblique spot on mesopleuron reaching its anterior margin, and the apex of hind femur black. It may be separated from *chekiangensis* (Ôuchi) by having the face dark brown to black (not yellow), and the pteropleuron partly and hypopleuron wholly black (not yellow throughout).

**Xylomya gracilicorpus Yang et Nagatomi, sp. nov.**

(Figs. 190, 198, 226–229)

Female. Body length 8.9–11.6 mm, wing length 8.1–10.8 mm. Head black, and pale grey pollinose. Hairs on head pale, but upper occiput with some black hairs. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.3–1.5 times distance from antennae to median ocellus, 1.6–1.9 times width of frons just above antennae and 1.2–1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.1–2.4 times as wide as ocellar triangle, 1.3–1.4 times width of frons at median ocellus and 0.8 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.2–1.5 times that from antennae to median ocellus. Antenna dark brown to black; scape and pedicel with black hairs; antennal ratio c. 1: 0.5: 4.4; antenna 1.6 times as long as distance from antennae to median ocellus. Proboscis yellow with pale hairs. Palpus pale yellow with pale hairs; palpus obtuse apically, 1.0–1.2 times as long as distance from antennae to median ocellus, 0.3 times wider than long.

Thorax black, and pale grey pollinose. Humerus yellow, mesonotum with three pairs of yellow lateral spots, and scutellum (except base and sides) yellow. Mesopleuron with upper and posterior areas yellow; metapleuron with one large yellow spot; area just behind sternopleuron yellowish brown to brown. Hairs on thorax pale. Legs yellow; trochanters, dorsal apex of mid femur, apex (except tip) of hind femur, less than apical 1/2 of hind tibia, fore and mid tarsi (except basal portion of tarsomere 1), and hind tarsus dark brown to black; hairs on legs pale and black. Wing nearly hyaline with a yellow tinge; veins brown to dark brown. Haltere yellow.

Abdomen black, and pale grey pollinose, but tergite 8, cerci, lateral portion of tergite 1, and posterior margins of tergites 2–7 yellow (yellow bands become very thin on tergites 2–6). Hairs on abdomen pale, but dorsum with some black hairs. Female genitalia (Figs. 226–229): Sternte 8 rather quadrate, with mid-posterior desclerotized part large and with anterior margin concave; tergite 10 very narrow; cercus with segment 1 longer than wide and rather rectangular, and segment 2 smaller and rounded apically; tergite 9 undivided, large and concave at anterior margin; genital furca with anterior bar small and truncate anteriorly, and with lateral bar wide and acute posteriorly [if interpretation of the shape is correct]; head of spermatheca oval with basal portion narrow.

Male. Unknown.

Holotype ♀, paratype 1♀, Dailing, Heilongjiang, 22. v. 1971.
Figs. 226–229. *Xylomya gracilicorpus* sp. nov., female genitalia. 226, Ventral view; 227, dorsal view; 228, sternite 8; 229, head of spermatheca.

**Distribution.** China (Heilongjiang).

**Remarks.** This species is similar to *moiwana* (Matsumura), but may be separated from it by having the coxae yellow and the hind tarsomere 1 wholly black. In *moiwana*, the coxae are black and the hind tarsomere 1 is yellow basally.
Xylomya longicornis MATSUMURA
(Figs. 230–236)


Figs. 230–236. Xylomya longicornis MATSUMURA, female (230–232) and male (233–236). 230, Antennal flagellum, inner view; 231, palpus, lateral view; 232, hind femur and tibia, anterior view; 233, sternite 8; 234, tergite 9 and cerci, dorsal view; 235, genital capsule, dorsal view; 236, genital capsule, ventral view. (From NAGATOMI and TANAKA, 1971).

No Chinese specimen is available to us. For redescription of longicornis, see NAGATOMI and TANAKA (1971), whose several illustrations are here copied.

Distribution. North China; E. Siberia (South Primorye), Japan.

Remarks. This species may be separated from other Chinese species of Xylomya by having the antenna much longer.
Xylomya moiwana Matsumura
(Figs. 191–192, 237–242, 243–246)


For redescription of moiwana, see Nagatomi and Tanaka (1971). This species is redescribed based on Chinese specimens.

Male. Body length 12.4 mm, wing length 11.1 mm. Head dark brown to black, and pale grey pollinose except for ocellar tubercle and median area of frons subshiny. Hairs on head black and pale; upper occiput chiefly with black hairs, but its median area wholly pale haired; ocellar tubercle and frons black haired. Head 1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.5 times distance from antennae to median ocellus, 2.0 times width of frons just above antennae and 1.7 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.3 times width of ocellar triangle, 1.5 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.8 times that from antennae to median ocellus. Antenna dark brown to black, but pedicel and inner surfaces of flagellomeres 1–7 yellowish brown; scape and pedicel with black hairs; antennal ratio c. 1: 0.9: 7.4; antenna 2.2 times as long as distance from antennae to median ocellus. Proboscis chiefly black with pale hairs. Palpus dark brown except for apical portion yellow, with black hairs; palpus obtuse apically, 0.9 times as long as distance from antennae to median ocellus, 0.4 times wider than long.

Thorax black and weakly pale grey pollinose. Mesonotum with the following parts yellow: three pairs of lateral parts, humerus, a spot before suture and thin band just behind suture, and a spot including postalar callus; scutellum yellow with base and sides black. Mesopleuron with upper and posterior areas yellow; metapleuron with a yellow spot. Hairs on thorax pale. Legs yellow, but coxae and trochanters black; apical portions of hind femur and tibia black; tarsi brown to dark brown except for mid tarsomere 1 and basal portion of hind tarsomere 1; fore and mid femora and tibiae may have dark brown tinge; hairs on legs pale and black. Wing nearly hyaline, tinged with yellowish on anterior field; veins yellowish brown to dark brown. Haltere yellow, with base of knob partly black.

Abdomen black, and pale grey pollinose; lateral spot on tergite 1 and posterior margins (except middle) of tergites 2–6 yellow, and posterior margins of sternites 2–3 yellow to yellowish brown. Hairs on abdomen pale, but dorsum with some black hairs. Male genitalia (Figs. 237–242): Tergite 9 with apico-lateral process which is shorter than in chekiangensis and sinica; cercus rather quadrate, slightly longer than wide; sternite 10 consisting of a long middle process (which appears to be divided into two lobes) and two short lateral processes (which are acute and curved inwards apically), and sternite 10 with a
large and rather quadrate basal plate weakly concave apically; gonocoxite with dorsal lobe pointed at inner apex; sternite 9 deeply incised basally and with wide apical process narrower basally and rhombic apically; gonostylus very large, rather triangular, and with apical margin more or less concave; sternite 8 with paired wide lobes rounded apically; aedeagus long, straight, and gradually tapering toward apex; interbasis long and distinctly curved.

Female. Body length 12.2–13.3 mm, wing length 10.8–11.2 mm. Similar to male except as follows: Head 1.4–1.6 times higher than long; width of one eye on a mid line in direct frontal view 1.2–1.3 times distance from antennae to median ocellus, 1.6–1.8 times width of
frons just above antennae and 1.4–1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.4–2.5 times width of ocellar triangle, 1.5 times width of frons at median ocellus and 0.8–0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna 2.3–2.6 times as long as distance from antennae to median ocellus. Palpus 0.9–1.0 times as long as distance from antennae to median ocellus, 0.4–0.45 times wider than long. Metapleuron almost wholly yellow, or black with a yellow spot. Lateral spot on abdominal tergite 1 smaller. Female genitalia (Figs. 243–246): Sternite 8 rather quadrate, with mid-posterior desclerotized part large; tergite 10 narrow, T-shaped, and fused with cercus laterally; cercus with segment 1 longer than wide (in dorsal or ventral view) and slightly narrow apically, and segment 2 short; sternite 10 with wide median desclerotized vitta; tergite 9 rectangular, and with anterior margin concave; genital furca with

Figs. 243–246. *Xylomya moiwana* Matsumura, female genitalia. 243, Dorsal view; 244, ventral view; 245, sternite 8; 246, head of spermatheca.
anterior bar narrow and protruded anteriorly; head of spermatheca spherical.


Distribution. China (Jilin, Liaoning and Heilongjiang); E. Siberia (South Primorye), Kuril (Kunashiri Island), Japan.

Xylomya sauteri (James)


The original description of sauteri is given below.

Male. Front of moderate width, the face slightly wider; eyes emarginated just above antennae. Occiput, vertex, and upper three-fourth of the front black; the lower part of the front, the entire face, proboscis, palpi, and antennae yellow. Palpi only moderately dilated. Vertex and upper two-thirds of front with dense, appressed, golden pile; the front on each side just above antennae, at the emarginations of the eye, with a silvery-pruinose spot; face and occiput yellowish-pruinose, the latter with some erect yellow pile below. Antennae barely longer than the head; the first two segments subequal; the remainder fused into a flagellum, which is about five times the length of the first segment. Thorax, including legs and halteres, yellow, yellow-pilose except on the scutellum, the supralar regions, and parts of tarsi, where the pile is black, though short and inconspicuous; the tarsi especially the fore ones, are more or less brownish-yellow.hind femora neither thickened nor denticate. Wings yellowish; veins brownish-yellow. Cross vein m-cu distinct, almost as long as r-m. Abdomen yellow; segments two to five inclusively each with a narrow, subapical, transverse black band; venter of segment one with a conspicuous oblique transverse spot on each side basally; pile yellow, but the dorsum with considerable short black pile intermixed. Genitalia large. Length, 12 mm.

Female. Differs only sexually.

Holotype (by James), male, Allotype, female, Toa, Tsui Kutsu, Formosa, May, 1914. Paratopotypes, 5 males, 8 females, same data. Paratype, female, Formosa (Sauter), Oldenberg collection. A female, same data as holotype, is evidently the same species, but the head is missing.

Distribution. Taiwan.

Xylomya sichuanensis Yang et Nagatomi, sp. nov.

(Figs. 193, 199, 247–250)

Female. Body length 11.1 mm, wing length 11.8 mm. Head black with pale grey pollinosity. Hairs on head pale, but upper occiput, ocellar tubercle and dark area of frons with black hairs. Head 1.3 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus. 1.6 times width of frons just above antennae and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.5 times width of ocellar triangle, 1.7 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance
from ridge below proboscis to antennae 1.7 times that from antennae to median ocellus. Antenna dark brown to black, but inner surfaces of pedicel and flagellomeres 1–7 brownish yellow; scape and pedicel with black hairs, flagellum with black hairs on apical portion; antennal ratio c. 1: 0.9: 8.8; antenna 2.6 times as long as distance from antennae to median ocellus. Proboscis reddish yellow with pale hairs. Palpus yellow with pale hairs; palpus rounded apically, 0.5 times as long as distance from antennae to median ocellus, 0.6 times

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Figs. 247–250. *Xylomya sichuanensis* sp. nov., female genitalia. 247, Ventral view; 248, dorsal view; 249, sternite 8; 250, head of spermatheca.
wider than long.

Thorax black; mesonotum with a pair of yellow longitudinal stripes from humeri to a point opposite wing base, a pair of yellow lateral spots just before suture (which are connected with median longitudinal stripes), and yellow area including postalar calli; scutellum with mid-posterior area yellow. Upper and posterior portions of mesopleuron, postero-upper portion of sternopleuron, and metapleuron yellow. Hairs on thorax pale. Legs yellow, but mid and hind coxae partly and trochanters wholly tinged with black, and fore and mid tarsomeres 2-5, posterior apex of mid femur, less than apical 1/2 of hind femur, apical 1/2 of hind tibia and entire hind tarsus black; hairs on legs pale and black. Wing more or less yellowish, veins brown to dark brown. Haltere yellow.

Abdomen black, but lateral portions of tergite 1 and posterior margins of tergites 2-8 yellow. Hairs on abdomen pale, but dorsum with some black hairs. Female genitalia (Figs. 247-250): Sternite 8 rather pentagonal, with small mid-posterior concavity; tergite 10 narrow and T-shaped; cercus with segment 1 much longer than wide, and segment 2 narrow basally and rounded apically; sternite 10 divided into 2 sclerites; sclerotized tergite 9 short; genital furca with anterior bar short and narrow, and with lateral bar narrow; head of spermatheca spherical.

Male. Unknown.

Holotype ♀, Emeishan, Sichuan, 29. iv. 1957.

Distribution. China (Sichuan).

Remarks. This species is very similar to *sinica* sp. nov., but may be separated from it by having the hind tarsomere 1 wholly black, the metapleuron yellow, the wing without brown to dark brown coloration on apical portion, and the female cercus with segment 2 narrow basally.

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**Xylomya sinica** Yang et Nagatomi, sp. nov.

(Figs. 194–195, 200, 251–256, 257–260)

Male. Body length 11.9 mm, wing length 11.6 mm. Head black, with pale grey pollinosity. Hairs on head pale, but upper occiput, ocellar tubercle and shining black area on frons with some black hairs. Head 1.4 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus, 1.6 times width of frons just above antennae and 1.4 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.4 times width of ocellar triangle, 0.9 times distance from antennae to median ocellus, 1.4 times width of frons at median ocellus and 0.9 times width of face at lowest point in direct frontal view; distance from ridge below proboscis to antennae 1.6 times that from antennae to median ocellus. Antenna [flagellum missing] with scape dark brown, with pedicel yellowish brown, and with black hairs; antennal ratio c. 1: 0.4: ?. Proboscis yellow except basal portion brown to dark brown, and pale haired. Palpus yellow with basal 1/3 brown, and pale haired; palpus somewhat acute apically, 0.95 times as long as distance from antennae to median ocellus, 0.3 times wider than long.
Thorax black, and pale grey pollinose; mesonotum with one pair of narrow yellow median longitudinal stripes reaching to yellow humeri, one pair of yellow lateral spots just before suture (which are connected with median longitudinal stripe), and yellow paired anterolateral (including humeri) and postero-lateral (including postalar calli) spots; scutellum with mid-posterior area yellow. Upper and posterior portions of mesopleuron and postero-upper portion of sternopleuron yellow; metapleuron black with one yellow spot. Hairs on thorax pale. Legs yellow, but coxae partly and trochanters wholly tinged with black; hind femur and tibia with apical 1/2 (or so) black; tarsomeres 2–5 black; hairs on legs pale and black. Wing more or less yellowish, but apical portion distinctly tinged with brown to dark brown; veins brown to dark brown. Haltere yellow.

Abdomen black, and pale grey pollinose, but lateral portions of tergite 1 and posterior margins of tergites 2–8 yellow. Hairs on abdomen pale, but dorsum with some black hairs.

Figs. 251–256. *Xylomya sinica* sp. nov., male genitalia. 251, Tergite 9, sternite 10 and cerci, dorsal view; 252, tergite 9, sternite 10 and cerci, ventral view; 253, tergite 8; 254, sternite 8; 255, genital capsule, dorsal view; 256, genital capsule, ventral view.
Male genitalia (Figs. 251–256): Tergite 9 with long apico-lateral process; cercus much longer than wide; sternite 10 consisting of one broad middle process and two long lateral processes which are curved inward and widened apically; sternite 8 divided into two large lobes apically; gonocoxite with dorsal lobe abruptly narrowed and pointed apically; sternite 9 concave basally, and with mid-posterior process dentate apically; gonostylus large and nearly quadrate; aedeagus long and gradually tapering toward apex with a mid-basal dorsal process.

Figs. 257–260. *Xylomya sinica* sp. nov., female genitalia. 257, Ventral view; 258, dorsal view; 259, sternite 8; 260, head of spermatheca.
which is curved upward; interbasis somewhat curved and acute apically.

Female. Body length 14.2–14.4 mm, wing length 14.0–14.1 mm. Similar to male except as follows: Head 1.3–1.5 times higher than long; width of one eye on a mid line in direct frontal view 1.4 times distance from antennae to median ocellus, 1.4–1.5 times width of frons just above antennae and 1.4–1.5 times width of face at lowest point in direct frontal view; width of frons just above antennae 2.7–2.9 times width of ocellar triangle, 1.4–1.5 times width of frons at median ocellus and 1.0 times width of face at lowest point in a direct frontal view; distance from ridge below proboscis to antennae 1.7–1.8 times that from antennae to median ocellus. Antenna brown to dark brown, but pedicel and inner surfaces of flagellomeres 1–3 (or 1–6) yellowish brown; scape and pedicel black haired; antennal ratio c. 1: 0.4: 6.0; antenna 2.8–2.9 times as long as distance from antennae to median ocellus. Palpus 0.9–1.0 times as long as distance from antennae to median ocellus, 0.34 times wider than long. Female genitalia (Figs. 257–260): Sternite 8 rather quadrate, but narrower anteriorly, with mid-posterior desclerotized part large, and with mid-posterior knob; tergite 10 narrow, T-shaped, and fused with cercus laterally; cercus with segment 1 much longer than wide, and segment 2 smaller and thin; sternite 10 divided into two sclerites which are connected medially by membrane; tergite 9 rectangular, and with anterior margin concave; genital furca with anterior bar short, and wider and rounded apically; head of spermatheca more or less oval with short basal portion thin.

Holotype $, Emeishan Mountain (1,800 m), Sichuan, 4. vii. 1957, Leyi Zheng. Paratypes 1♀, Emeishan Mountain (900 m), Sichuan, 29. iv. 1957; 2♀♀, Nanwutai, Shaanxi, viii. 1957.

Distribution. China (Sichuan and Shaanxi).

Remarks. This species is very similar to *sichuanensis* sp. nov., but may be separated from it by having the hind tarsomere 1 wholly yellow, the metapleuron black with yellow spot, the wing with brown to dark brown coloration on apical portion, and the female cercus with segment 2 uniformly thick.

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References


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