

New *Tenthredo* Linné, 1758 species from China (Hymenoptera, Tenthredinidae)

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HARIS, A.: *New Tenthredo* Linné, 1758 species from China (Hymenoptera, Tenthredinidae).

Abstract: Eleven new species are described from China, namely: *Tenthredo becvari* spec. nov., *Tenthredo ferroyunnanensis* spec. nov., *Tenthredo rubrolineata* spec. nov., *Tenthredo sinorufa* spec. nov., *Tenthredo sino-speciosa* spec. nov., *Tenthredo kucerai* spec. nov., *Tenthredo sinoabrahami* spec. nov., *Tenthredo sinomirabilis* spec. nov., *Tenthredo sinoflava* spec. nov., *Tenthredo sinopotanini* spec. nov. and *Tenthredo rubropedicella* spec. nov."

Keywords: China, Hymenoptera, Tenthredinidae, *Tenthredo*, new species

Introduction

This is the 11th contribution of the author to study the sawfly fauna of China (HARIS 1996, 2000, 2007, 2008, 2009, 2012, HARIS and ROLLER 1998, 1999 a,b, and 2007a). here we study the *Tenthredo* (Linné, 1758) species of China and provide description of 11 new species. The known *Tenthredo* species from China exceeds the 300 (known number of species in 2006 was 291 (WEI, NIE and TAEGER 2006)).

Material and methods

Most of the studied material was collected by S. Becvar, S. Sazanov, Zd. Jindra, E. Kucera and I. H. Marshal between 1992 and 1998 in different expeditions to Yunnan, Shaanxi and Kansu provinces of China. It amounts approximately 300 specimens. Only the new species are discussed here. For the identification of the species, we consulted the comprehensive books of MALAISE 1945 and SAINI 2007 completed with numerous papers as follows: HARIS and ROLLER 1998, 2007a,b, HARIS 2009, NIE and WEI 1998, 1999, 2002, NIU and WEI 2008, SHINOHARA 1998, TOGASHI 1980, 1987, WEI 2006, WEI and NIE 1997, 1998a, b, 2002 a,b,c,d, 2006, WEI et al. 1999, 2003, WEI and NIU 2009, YAN et al. 2008 and WEI and ZHONG 2002, ZHAO et al. 2010).

Types are deposited in the collection of Landesmuseum Linz, some paratypes are deposited in the collection of Rippl-Rónai Museum, Kaposvár.

Results

Tenthredo becvari spec. nov. (Figs. 4 and 7)

Holotype: female, China, Yunnan prov., Heishui 35 km N. of Lijiang, 27,13° N, 100, 19° E, 01-19. 07. 1992, lgt. S. Becvar.

Head ferruginous; white: mandible (except dark brown apex), narrow inner orbit, gena; black: large frontal spot from supraantennal tubercles till hypothetic hind margin of head, not touching eyes. Antenna black, white: apical 4 antennal segment entirely, apex of segment 5 and ventral part of segment 5 and ventroapical strip on segment 4. Thorax ferruginous; black: anterodorsal part of pronotum, entire mesonotal lobes, metanotum and narrow sutures of meso and metapleuron; white: wide hind margin of pronotum, tegula, mesoscutellum, mesoscutellar appendage and metascutellum. Legs entirely ferruginous only femora with longitudinal black line. Wings yellowish hyaline, venation dark brown, stigma and costa yellow transparent. Abdomen ferruginous, narrow base of propodeum black. Valvula 3 black. Head very densely, moderately deeply punctured on frontal area, vertex and temples matt as well. Narrow inner orbit smooth and shiny. Postocellar carina complete although on vertex weakly visible. OOL : POL : OCL : 21 : 6 : 19. Ratios of antennal segments: 13 : 9 : 36 : 27 : 25 : 17 : 16 : 15 : 18. Antenna about as long as head, thorax and first 2 abdominal segments combined. Gena about 1.1x as wide as diameter of anterior ocellus. Clypeus roundly emarginated and about 0.33x as deep as clypeal median length. Postocellar area wider than long as 12: 21. Head gently dilated than contracted behind eyes. Supraantennal tubercles and frontal crests confluent but weak, hardly elevated. Mesonotal lobes very densely granulated, matt. Mesoscutellum, mesoscutellar appendage densely and moderately deeply punctured, moderately shiny. Metascutellum with moderately deep, sporadic punctures, moderately shiny. Mesopleuron moderately densely and moderately sparsely, shallowly punctured with fine wrinkles between punctures, moderately shiny. Mesopleuron strongly elevated, subacute. Mesoscutellum strongly but bluntly elevated. Mesosternum without thorn. Abdominal tergites including propodeum finely microstriated, shiny. Apical tooth of claw longer than subapical. Hind basitarsus shorter than next 2 tarsal segments combined. Length of hind basitarsus : length of inner hind tibial spur: 2.0 : 1.0. Length: 11.7 mm.

Differential diagnosis and related species: check table A at the end of the paper.

Tenthredo ferroyunnanensis spec. nov. (Figs. 5 and 8)

Holotype: female, China, Yunnan, Zhongdian, 3200 m, 03. 07. 1998, leg. S. Sazanov.

Head ferruginous; white: mandible (except dark brown apex), narrow inner upper orbit, gena, lower inner orbit; black: large frontal spot from supraantennal tubercles till hypothetic hind margin of head not touching eyes. Antenna black, antennal segments 6-7(8) entirely, apical part of segment 5 white. Thorax black; white: wide hind margin of pronotum, tegula, mesoscutellum (but not mesoscutellar appendage) and central triangular spot on metascutellum, cenchri and hind linear margin of mesonotum and metanotum; ferruginous: large spot on upper part of mesopleuron, tegula. Legs entirely ferruginous only femora with longitudinal black line. Wings yellowish hyaline, venation dark brown, stigma and costa yellow transparent. Abdomen ferruginous, 1st tergite (pro-

podeum) and most of 2nd tergite (except ferruginous wide hind margin) black. Margin of valvula 3 black. Head very densely, moderately deeply punctured on frontal area, vertex and temples as well, gently shiny. Narrow inner orbit smooth and shiny. Postocellar carina complete although on vertex weakly visible. OOL : POL : OCL: 21 : 8 : 17. Ratios of antennal segments: 19 : 13 : 40 : 33 : 29 : 20 : 18 : 17 : 18. Antenna about as long as head, thorax (including half length of propodeum) combined. Gena about 1.8x as wide as diameter of anterior ocellus. Clypeus roundly emarginated and about 0.34x as deep as clypeal median length. Postocellar area wider than long as 17: 22. Postocellar furrows hardly visible. Head gently dilated than contracted behind eyes. Supraantennal tubercles and frontal crests confluent. Mesonotal lobes, mesoscutellum and mesoscutellar appendage very densely granulated, matt. Metascutellum with moderately deep, moderately dense punctures, moderately shiny. Mesopleuron densely and moderately roughly, moderately deeply punctured matt. Mesopleuron strongly elevated, subacute. Mesoscutellum gently and bluntly elevated. Mesosternum without thorn. Abdominal tergites including propodeum finely microstriated, shiny. Apical tooth of claw longer than subapical. Hind basitarsus shorter than next 2 tarsal segments combined. Length of hind basitarsus : length of inner hind tibial spur: 24 : 15. Length: 14.5 mm.

Differential diagnosis and related species: check table A at the end of the paper.

Tenthredo rubrolineata spec. nov. (Fig. 9)

Holotype: female, China, Yunnan, Heishui, 35 km N. of Lijiang, 27,13° N 100,19° E, 01-19- 07- 1992, lgt. S. Becvár. Paratype: female, topotypic.

Head dark reddish brown; black: large frontal spot from antennae till hind margin of head not reaching eyes but covering vertex and temples. Clypeus brown, labrum black. White: mandibles (except brown-black apex). Scape reddish brown, antennal joints 2-5 and 9 black, ventral part of antennal segment 5 and segments 6-8 white. Thorax black; yellowish white: wide hind margin of pronotum and cenchri; reddish brown: tegula and mesoscutellum (mesoscutellar appendage black). Legs entirely reddish brown only femora with longitudinal black line. Wings with slight yellowish brown infuscation, stigma, costa, apical third of subcosta yellow, veins black; brownish red: central hind margins of tergite 2-6 (wider in tergites 3-6), apex of abdomen from tergite 7 brownish black. Tergite 1 and 2 with lateral reddish yellow spot (only on tergite 1 on paratype). OOL : POL : OCL: 11: 2: 8. Postocellar area little wider than long as 9: 11. Ratios of antennal segments: 15 : 15 : 45 : 35 : 32 : 25 : 20 : 21 : 20. Antenna about as long as head and thorax combined including propodeum. Head including vertex, most of temples and frontal area and around densely granulated with moderately large granules, matt. Narrow inner orbits smooth and shiny. Frontal crest and supraantennal tubercles confluent. Occipital carina complete. Gena about 1.2x as wide as diameter of front ocellus. Head dilated than contracted behind eyes. Clypeus roundly emarginated, clypeal emargination about 0.3x as deep as clypeal median length. Mesonotal lobes densely and finely granulated, matt, granules even more smaller and finer than those on head. Mesoscutellum densely punctured with moderately deep punctures, moderately shiny. Mesoscutellar appendage and metascutellum densely punctured with moderately large and deep punctures hardly shiny. Mesopleuron with dense, moderately large and moderately deep and rough punctures and also wrinkled, hardly shiny. Mesoscutellum flat. Mesosternum gently and bluntly elevated. All abdominal tergites, including propodeum,

with fine microstriation, gently shiny. Length of hind basitarsus : length of inner hind tibial spur: 55 : 33. Hind basitarsus longer than next 2 but shorter than next 3 tarsal segments. Apical tooth of claw longer than subapical. Length: 13.6 mm.

Colour variations: abdominal sternites black in holotype but brownish yellow in paratype. Last abdominal tergites brownish black in holotype, but they are reddish brown in paratype. Mesoscutellum black in paratype.

Differential diagnosis and related species: check table A at the end of the paper.

Tenthredo ferruginea Schrank, 1776, local color variation (Figs. 6 and 10)

Female, China, Shaanxi prov., Qing Ling Shan mts., road Baoji-Taibai will., 21-23. 06. 1998, pass 40 km S of Baoji, Zd. Jindra leg.

Head black; white: narrow inner margin of eyes, mandibles (except apex), palpi, 2 blurred spot on base of labrum, short horizontal line on temple; reddish brown: hind orbit, labrum, clypeus and supraclypeal area. Antenna black, scape reddish brown, apex of segment 5 and segments 6-8 white. Thorax black; white: wide hind pronotal margin, margin of tegula, narrow linear hind margin of mesonotum and narrow linear hind margin of metanotum. Wings subhyaline, costa, apex of subcosta and stigma yellow transparent, base of stigma with infuscated spot. Veins black. Coxae, trochanters and femora black, apical 2/3 of anterior and apical 1/3 of middle femora reddish brown. Tibiae and tarsi white. Abdomen black; white: narrow linear hind margin of propodeum; red: abdominal tergites and sternites 3-5 and spot on valvula 3. Frontal area and around, vertex and temples very densely, deeply punctured with moderately small punctures, nearly granulated, gently shiny. Inner narrow orbits smooth and shiny. Supraantennal tubercles confluent with antennal crests. OOL : POL : OCL: 26 : 9 : 19. Postocellar area wider than long as 23: 19. Ratios of antennal segments: 20 : 13 : 46 : 39 : 38 : 29 : 26 : 22 : 22. Antenna about as long as head and thorax combined including propodeum. Mesonotum finely granulated, matt. Mesoscutellum and mesoscutellar appendage densely and deeply punctured with small punctures, moderately shiny. Anterior part of metascutellum smooth and shiny, posterior part densely punctured with small and deep punctures. Mesopleuron densely, roughly punctured with moderately small and moderately deep punctures, hardly shiny. Mesoscutellum flat. Mesopleuron gently and bluntly elevated. Mesosternum without thorn. Abdominal tergites with microstriation, moderately shiny. Length of hind basitarsus : length of inner hind tibial spur: 15 : 6. Hind basitarsus longer than next 2 tarsal segments combined but shorter than next 3. Apical tooth of claw longer than subapical. Length: 14.2 mm.

Differential diagnosis and related species: check table A at the end of the paper.

Tenthredo sinorufa spec. nov. (Fig. 11)

Holotype: female, China, Yunnan prov., Heishui, 35 km N. of Lijiang, 27,13° N, 100,19° E, 1-19. 07. 1992, Igt. S. Becvar.

Head, antenna and thorax black; white: antennal segments 6-9, ventral strip on segment 5, narrow lower quarter of inner orbit, mandible (except brown apex), 2 lateral-anterior spots on clypeus, palpi, cenchri and linear hind margin of metanotum; brown:

margin of labrum. Coxae, trochanters and femora black. Tibiae and tarsi brown. Wings subhyaline, gently brown infumate, costa yellow, stigma brown with yellow upper margin, veins black. Abdominal segments 1 and 2 black with confluent white lateral spots. Other segments red with 2 latero-ventral black band. Ovipositor black. Head including temples and vertex and inner orbit, moderately deeply and very densely punctured with moderately small punctures, matt. OOL : POL : OCL: 21 : 7 : 16. Postocellar area wider than long as 21 : 16. Postoccipital carina complete. Ratios of antennal segments: 17 : 13 : 42 : 31 : 28 : 22 : 16 : 15 : 17. Antenna as long as head and thorax combined including propodeum. Frontal crests not visible. Supraantennal tubercles present. Clypeus roundly emarginated, clypeal emargination about 0.28x as deep as median clypeal length. Gena about 1.8x as wide as diameter of anterior ocellus. Mesonotum densely granulated matt. Mesoscutellum and mesoscutellar appendage densely granulated matt, although granules are deeper. Metascutellum smooth and shiny with few large punctures. Mesopleuron roughly, very densely and moderately deeply punctured with moderately large punctures, without shiny interspaces. Hardly shiny. Mesoscutellum nearly flat, mesopleuron gently and bluntly elevated, mesosternum without thorn. Abdominal tergites, including propodeum, with microstriation, gently shiny. Length of hind basitarsus : length of inner hind tibial spur: 63 : 22. Basitarsus hardly longer than next 3 tarsal segments combined. Apical tooth of claws much longer than subapical. Length: 13.0 mm.

Differential diagnosis and related species: check table A at the end of the paper.

Tenthredo sinospeciosa spec. nov. (Figs. 1 and 12)

Holotype: female, China, Shaanxi prov., Qing Ling Shan mts., road Baoji and Taobai will., pass 40 km S. Baoji, 21-23. 06. 1998, lgt. Zd. Jindra.

Head black; white: temples and narrow inner margins of eyes connected to each other, 2 minute spot on vertex, mandibles, 2 small spots on basal margin of labrum and palpi. Middle of clypeus with subtriangular, whitish brown spot. Antenna black, white: apex of fifth, 6-7th entirely, 8th segment partly. Thorax black; white: wide hind margin of pronotum, tegula, mesoscutellum, metascutellum, narrow line behind metascutellum and cenchri. All coxae, trochanters and femora black. All tibiae and tarsi white. Wings hyaline, stigma, venation black, costa dark brown. Abdomen black; white: lateral spots on tergites 1-5 forming confluent line, narrow, linear hind margin of propodeum. Apical 2/3 of tergite 3 and 4 yellowish white. Frontal area and around, vertex densely, minutely and moderately deeply punctured, shiny. Inner margins of eyes smooth and shiny. Temples with moderately sparse, minute punctures, shiny. Ratios of antennal segments: 20 : 15 : 54 : 44 : 41 : 31 : 29 : 25 : 25. Antenna as long as head and thorax combined (including propodeum). OOL : POL : OCL: 13 : 4 : 10. Postocellar area slightly wider than long as 6 : 5. Postoccipital carina reaching up to postocellar furrows. Head dilated than contracted behind eyes. Supraantennal tubercles moderately developed confluent with supraantennal crests. Gena about as wide as diameter of anterior ocellus. Clypeus trapezoidally emarginated, clypeal emargination about 0.25x as deep as median clypeal length. Mesonotal lobes densely, uniformly granulated, matt. Mesoscutellum and mesoscutellar appendage densely, moderately deeply punctured, hardly shiny. Metascutellum moderately densely, deeply punctured with deep punctures, moderately shiny. Mesopleuron very finely and very densely wrinkled and punctured, hardly shiny. Mesopleuron strongly but bluntly elevated. Mesoscutellum flat. Mesosternum without thorn. Abdominal tergites shiny. Hind basitarsus longer than next 2 but shorter than next

3 tarsal segments combined. Length of hind basitarsus : length of inner hind tibial spur: 64 : 31. Apical and subapical tooth of claws subequal. Length: 14.7 mm.

Differential diagnosis and related species: check table B at the end of the paper.

Tenthredo kucera spec. nov. (Figs. 2 and 13)

Holotype: female, China, Yunnan prov., Dequen, 3900 m/m, 10-19. 07. 1996, E. Kucera leg.

Head pale ferruginous; black: large frontal spot from supraantennal tubercles till hypothetical hind margin of head including vertex and temples not reaching eyes. Basal 3 segments of antenna ferruginous, white from segment 4 with dorsal longitudinal black line on its total length. Thorax pale ferruginous with one-one wide black band on mesonotum covering lateral third of middle and lateral half of lateral lobes and sunken area of metanotum between mesoscutellar appendage and metascutellum. Legs pale ferruginous, femora and four anterior tibiae with black longitudinal line. Costa yellow except black apical fifth, subcosta, stigma and veins black. Wings subhyaline. Abdomen including ovipositor black, propodeum with wide anterior and hind yellow margins. Base of ovipositor with small yellow spot. Head very densely punctured with small, moderately deep punctures without interspaces, hardly shiny. OOL : POL : OCL: 21 : 6 : 12. Postocellar area wider than long as 21 : 12. Postoccipital carina complete. Postocellar furrows hardly visible. Ratios of antennal segments: 15 : 10 : 38 : 25 : 22 : 19 : 17 : 15 : 16. Antenna about as long as head and thorax combined without propodeum. Supraantennal tubercles confluent with frontal crests. Gena about 0.8x as wide as diameter of anterior ocellus. Clypeus roundly emarginated, clypeal emargination about 0.4x as deep as clypeal median length. Mesonotum densely granulated, matt. Mesoscutellum and mesoscutellar appendage with dense, moderately deep and small punctures, interspaces with fine wrinkles. Metascutellum with sporadic larger and moderately deep punctures, finely wrinkled, bluntly shiny. Mesopleuron very densely, moderately roughly and moderately deeply punctured, bluntly shiny. Mesoscutellum gently, slightly elevated with blunt horizontal carina, mesopleuron slightly and bluntly elevated, mesosternum without thorn. Length of hind basitarsus : length of inner hind tibial spur: 51 : 23. Hind basitarsus as long as next 3 tarsal segments combined. Subapical tooth of claw shorter than apical. Length: 12.1 mm.

Differential diagnosis and related species: check table B at the end of the paper.

Tenthredo sinoabrahami spec. nov. (Fig. 14)

Holotype: female: China, Yunnan, 25 km E. Zhongdian, 3500 m, 22. 06. 1998, leg. S. Murzin.

Head pale yellow (including mouthparts) black only a large frontal spot covering temples, vertex, frontal area reaching upper inner half margin of eyes leaving only 1-1 minute drop-shaped yellow spots on upper corner of eyes. Antenna black, scape and pedicell pale yellow. Thorax pale yellow; black: mesonotal lobes entirely (except narrow hind margin of hind, posterior lobes), and metanotum (leaving pale yellow of all scutelli). Abdominal tergites from tergite 3 ferruginous. Propodeum and 2nd tergite black, propodeum with wide yellow basal and apical margin. Abdominal sternites yellow.

Legs entirely yellow. Wings hyaline, costa and stigma pale yellow, venation brown. Head, including temple and vertex deeply and roughly punctured, shiny, around frontal area densely wrinkled. Postoccipital carina complete and well developed. Ratios of antennal segments: 10 : 5 : 22 : 15 : 15 : 13 : 10 : 10 : 10. Antenna short and relatively thick, as long as head and thorax without propodeum combined. OOL : POL : OCL: 14 : 5 : 10. Postocellar area wider than long as 1 : 1.6. Clypeus roundly emarginated. Clypeal emargination about 0.33x as deep as clypeal median length. Gena 1.2x as wide as diameter of anterior ocellus. Supraantennal tubercles confluent with antennal crest, normally, not strongly, developed. Mesonotal lobes with minute, moderately deep and very dense punctures, moderately shiny. Mesoscutellum with moderately large, deep, dense punctures, moderately shiny. Mesoscutellar appendage with large, deep and dense punctures, moderately shiny. Metascutellum nearly smooth and shiny with few deep punctures. Mesopleuron densely punctured with moderately deep, moderately small punctures, also wrinkled, hardly shiny. Mesopleuron strongly elevated. Mesoscutellum bluntly, subpiremidally elevated with blunt horizontal carinas. Head and abdomen with moderately dense, short, white pubescence. Propodeum shiny with very fine surface sculpture. Other tergites hardly shiny with microstriation. Length of inner hind tibial spur : length of hind basitarsus: 17 : 41. Hind basitarsus hardly shorter than next 3 segments combined as 41 : 45. Subapical tooth of claws hardly shorter than apical. Length: 8.7 mm.

The new species is dedicated to Dr. Levente Ábrahám.

The very closest relative of the new species is *Tenthredo grombczewskii* (Jakowlew, 1891). The differences: scapus and pedicell are entirely yellow in the new species (they are black in *T. grombczewskii*), the new species much smaller (8.7 mm versus 13-14 mm) and legs completely yellow (dorsal side of all femora and line of anterior tibia black in *T. grombczewskii*). Gena of *Tenthredo grombczewskii* very elongated, 2.5x as long as diameter of anterior ocellus, in the new species gena subequal with the diameter of anterior ocellus (see the description above).

Other related species:

Tenthredo brevipilosila Wei, 2002, large, 15 mm species (the new species is only 8.7 mm), antenna long (short in the new species) and legs richly decorated with black (entirely yellow in the new species). *Tenthredo brevipilosila* Wei, 2002 is closely related to *T. shenisensis*. *Tenthredo nigrobasalis* Malaise, 1945 has tergite 1 and 2 black, other tergites red, otherwise completely different from the new species having legs are richly coloured with black, and head and thorax black.

***Tenthredo sinomirabilis* spec. nov. (Fig. 15)**

Holotype: female, China, Shaanxi, Qinling mts. Xunyangba (6 km E), 1000-1300 m., 23. 05.- 13. 06. 1998, leg. I. H. Marshal

Head and antenna black; white: mandible (except apex), labrum, clypeus, palpi and blurred spot on lower third of outer orbit. Thorax black; white: wide hind margin of pronotum, tegula, large elongate spot on mesopleuron, vertical broad band on katepimeron, most of metepisternum. Legs white; black: hind femur, dorsal side of middle femur, dorsal line of anterior femur, small apical spot of anterior and middle tibiae, apex and dorsal line on hind tibia. Wings subhyaline, apical third gently brown infusate. Stigma black with wide lower yellow transparent margin, costa, subcosta and veins black.

Abdomen black; yellow: wide margin of propodeum, wide, central hind margins of tergites 3-9: tergite 8 dominantly yellow, hind yellow bands on tergites 5-6 spot-like, short. Sternites dominantly yellow with wide basal black margins. Base of ovipositor white, otherwise black. Head shiny with sporadic large and deep punctures. Postoccipital carina complete. OOL : POL : OCL: 25 : 7 : 15. Postocellar area wider than long as 5: 3. Ratio of antennal segments: 22 : 14 : 53 : 39 : 35 : 25 : 22 : 19 : 19. Antenna about as long as head and thorax combined including half of propodeum. Supraantennal tubercles confluent with frontal crests. Gena about 0.8x as wide as diameter of anterior ocellus. Clypeal emargination about 0.2x as deep as clypeal median length. Mesonotum and mesoscutellum with very dense, small and deep punctures, nearly granulated, moderately shiny. Mesoscutellar appendage with fine coriaceous surface sculpture with few large and deep punctures, slightly shiny. Metascutellum roughly, horizontally wrinkled, hardly shiny. Mesopleuron very densely, minutely, shallowly punctured, moderately shiny. Mesoscutellum flat. Mesopleuron gently and bluntly elevated. Mesosternum without thorn. First tergite (propodeum) with minute coriaceous surface sculpture, other tergites with fine microstriation, moderately shiny. Length of hind basitarsus : length of inner hind tibial spur: 15 : 7. Hind basitarsus longer than next 2 tarsal segments combined but shorter than next 3. Length: 15.0 mm.

In the key of MALAISE (1945), and SAINI (2007), the new species runs to *Tenthredo kumaonensis* (Rohwer, 1921), valid name is *Tenthredo dorsivittata* (Cameron, 1902). *Tenthredo dorsivittata* Cameron has mesonotum polished with small separate punctures, mesopleuron shiny with sparse punctures, a band below antennae is white, hind femur partly, mesosternum white, clypeus moderately deeply emarginated (0.25x), propodeum in dorsal view is black, lower hind orbit white. The new species has mesonotum hardly shiny with dense punctures, mesopleuron densely, minutely punctured, hardly shiny, area below antenna is completely black, hind femur entirely black, hind tibia with longitudinal black line, tergites 3 and 4 without large triangular spot, mesosternum is black, clypeus hardly emarginated (0.17x), half of propodeum in dorsal view is yellowish white, lower hind orbit is black.

Other closely related species is *Tenthredo melanosternum* M.S. Saini & Vasu, 1999. The abdominal pattern of *Tenthredo melanosternum* Saini and Vasu is completely different from the new species (see Fig. 346 in SAINI 2007), anterior lobe of mesonotum with pale apex (entirely black in the new species) and clypeus is moderately deeply emarginated (0.25x) but subtruncate in the new species (0.17x).

In *Tenthredo shii* Wei, 1998, clypeus even more deeply emarginated (0.33x as deep as clypeal median length) and all scutelli are pale, mesonotum is indistinctly punctured and shiny (subtruncate in the new species and scutelli are black, mesonotum is distinctly punctured, hardly shiny).

Finally, the new species differs from *Tenthredo malimilova* Wei, 2005, that *T. malimilova* has all scutelli and scape pale, 1st and 2nd tergites smooth and shiny and clypeus roundly emarginated. These are black in the new species, all tergites with fine microstriation and never smooth and shiny and clypeus is subtruncate.

***Tenthredo sinoflava* spec. nov. (Figs. 3 and 16)**

Holotype: female, China, Shaanxi, Qinling mts., Xunyangbam (6 km E) 1000-1300 m., 05. 23.- 13. 06. 1998, I. H. Marshal leg.

Body pale straw (green in living); black: antenna entirely, frontal spot anteriorly straight cut before anterior ocellus, reaching inner margin of eyes, partly covering vertex and temples, mesonotum (except V-shaped pale hind margin of anterior lobe), sunken area between mesoscutellum and metascutellum, abdominal tergites (wide anterior margin and triangular posterior margin of propodeum, hind margins of tergites 2-3 and trinagular hind margin of tergite 4 remaining pale), longitudinal broken band on mesopleuron, dorsal longitudinal line of all femora, apex of middle and hind tibiae, longitudinal line of hind tibia, hind margin of ovipositor and hind tarsus. Wings hyaline, stigma, costa and subcosta after broken part yellow, veins black. Head smooth and shiny. Postoccipital carina complete. OOL : POL : OCL: 22 : 5 : 16. Postocellar area wider than long as 23 : 16. Ratio of antennal joints: 18 : 14 : 47 : 35 : 30 : 25 : 20 : 19 : 19. Antenna as long as head and thorax combined including propodeum. gena about 0.6x as wide as diameter of anterior ocellus. Clypeus widely emarginated, clypeal emargination about 0.16x as deep as clypeal median length. Supraantennal tubercles confluent with frontal crests. Mesonotum densely, minutely and moderately punctured, shiny. Mesoscutellum and mesoscutellar appendage smooth and shiny. Metascutellum shiny with sporadic, moderately large, deep punctures. Mesopleuron very densely and minutely punctured, hardly shiny. Mesoscutellum strongly but not acutely elevated. mesopleuron strongly subacutely elevated. Mesosternum without thorn. Abdominal tergites shiny with fine microstriation (including propodeum). Length of inner hind tibial spur: length of hind basitarsus: 16 : 29. Hind basitarsus subequal with next three tarsal segments combined as 58 : 60. Apical tooth of claw subequal or slightly longer than subapical. Length: 12.3 mm.

The species belongs to *Tenthredo subflava* group which has 10 members, namely *Tenthredo casta* Konow, 1908; *T. bilineacornis* Wei, 1998; *T. nigroscalaris* Malaise, 1945; *T. flatoscuteuania* Wei et Niu, 2010; *T. latidentella* Wei et Zhao, 2010 ; *T. longitudinalicarinata* Wei, 2006; *T. tenuisomania* Wei, 1998; *T. subflava* Malaise, 1945; *T. mossafila* Wei, 2002 and *T. laoviridis* Haris, 2013. It would run to *T. subflava* Malaise, 1945 in the key of ZHAO et al. (2010) having very strongly elevated (although definitely not acute mesoscutellum) and very strongly elevated (although not acute) mesepisternum-mesopleuron and clearly developed but definitely low, not elevated supraantennal tubercles.

The frontal spot of *T. nigroscalaris* Malaise, 1945 is very small comparing the one of the new species (see the photo of holotype of *T. nigroscalaris* Malaise in HARIS 2013).

***Tenthredo sinopotanini* spec. nov. (Fig. 17)**

Holotype: female, China, Shaanxi prov. Qing Ling Shan mts., road Baoji-Taibai, pass 40 km S. Baoji, 21-23. 06. 1998., Zd. Jindra lgt.

Body pale straw (green in life); black: antenna entirely, total dorsal side of head starting from supraclypeal area including inner orbits, temples and vertex, mesonotum, metanotum, hind wide margin of mesoscutellum, metascutellum (except pale spot in middle), vertical band on mesopleuron, hind margin of mesopleuron, longitudinal line on all femora and on four anterior tibiae, hind tibia entirely, all tarsus. Abdominal tergites black; pale: wide anterior and posterior margins of propodeum, apical half of tergite 3, narrow central margin of tegite 4, narrow hind margin of tergite 8, tergite 9 entirely. Abdominal sternites and ovipositor pale, valvula 3 with black margine around. Wings slightly infusate, veins, costa, subcosta and stigma black. Head densely, moder-

ately deeply and not uniformly punctured with small punctures, shiny, interspaces about 0.2-0.8x as large as a puncture. Postoccipital carina complete. OOL : POL : OCL: 6 : 2 : 5. Postocellar area wider than long as 5 : 9. Ratios of antennal segments: 12 : 7 : 29 : 21 : 19 : 13 : 13 : 12 : 12. Supraantennal tubercles and antennal crests confluent, supraantennal tubercles slightly developed. Antenna about as long as head and half of thorax (till mesoscutellum) combined. Gena about 0.7x as wide as diameter of anterior ocellus. Clypeal emargination about 0.33x as deep as clypeal median length. Mesonotum very densely, minutely, uniformly and moderately deeply punctured, moderately shiny. Mesoscutellum densely and moderately deeply punctured with minute punctures, shiny. Mesoscutellar appendage with sporadic, moderately small, deep punctures, shiny. Metascutellum with moderately large, shallow punctures, shiny. Mesopleuron densely punctured with minute, moderately deep punctures, moderately shiny. Mesoscutellum bluntly elevated, mesopleuron strongly, subpyramidally elevated. Mesosternum without thorn. Abdomen from tergite 2 with fine microstriation, shiny. Length of hind basitarsus : length of inner hind tibial spur: 45 : 21. Hind basitarsus as long as next 3 tarsal segments combined. Length: 9.7 mm.

The new species is related to *Tenthredo danbanica* Wei & Niu, 2009, however, *T. danbanica* has only a frontal spot, scape and pedicell are yellow, third tergite is dominantly black. In the new species, head, except hind orbit, is black and also scape and pedicell are black, third tergite with wide yellow band.

The other relative is *Tenthredo brachycera* (Mocsáry, 1909), however, in *T. brachycera* (and its relatives) the 4th tergite is yellow, not the 3rd as in the new species. Furthermore, in *T. brachycera*, the mesosternum black but entirely pale in the new species.

***Tenthredo rubropedicella* spec. nov. (Fig. 18)**

Holotype: female, China, Kansu mer., Xiahe (Labrang), 3300-3700 m., 01-15. 06. 1998, V. Major leg. Paratype: topotypic.

Antenna black, only pedicell (2nd segment) ferruginous (scape and antennal flagellum entirely black). Head black; yellow: clypeus, labrum, mandibles (except brown apex) and palpi yellowish white. Thorax entirely black (only cenchri pale). All coxae, trochanters and femora black. Tibiae reddish yellow, anterior 4 tibiae with apical small black spot, hind tibiae with wider black apical ring. Tarsi reddish yellow. Wings hyaline; stigma, apical third of costa, subcosta and veins black. Basal 2/3 of costa yellow. Abdomen black, 3rd tergite yellow with large anterior semicircular black area. Tergite 4 with 2 yellow lateral spots. Tergite and sternite 7 yellow with black anterior margin. Tergite 10 yellow. Sternites 3 and 4 with large central yellow spot on hind margin. Ovipositor black. OOL : POL : OCL: 22 : 5 : 10. Postocellar area wider than long as 2 : 1. Ratios of antennal segments: 14 : 8 : 30 : 17 : 16 : 13 : 12 : 11 : 11. Antenna about as long as head and half of thorax combined. Total area of head very densely punctured with small but rough, moderately deep punctures, matt. Supraantennal tubercles slightly developed and confluent with frontal crest. Postoccipital carina complete. Gena about 0.9x as wide as diameter of anterior ocellus. Clypeal emargination about 0.25x as deep as clypeal median length. Mesonotal lobes and mesoscutellum densely granulated, matt. Mesoscutellar appendage, densely, roughly punctured with moderately deep and moderately large punctures, moderately shiny. Metascutellum, densely, moderately deeply

punctured with small punctures, hind margin smooth and shiny. Mesoscutellum gently and bluntly elevated. Mesopleuron strongly, subacutely elevated. Mesosternum without thorn. All abdominal tergites with fine microstriation, gently shiny. Length of hind basitarsus : length of inner hind tibial spur: 22 : 10. Hind basitarsus longer than next 2 but shorter than next 3 tarsal segments combined. Subapical tooth of claw shorter than apical. Length: 11.1 mm.

Differences

- 1 (2) Thorax is entirely black, scape is ferruginous *Tenthredo rubropedicella* spec. nov.
 2 (1) Scutella are yellow, whole antenna is black.
 3 (4) Apical third of anterior wing is dark infuscate. Stigma is pale brown. Sternites are dominantly black (except sternites 3-4 and posterior margins of sternites 5-7). Hind femur is pale with dorsal black strip. (YAN et al. 2008) *Tenthredo hengshana* Wei & Yan, 2008
 4 (3) Wing is hyaline. Stigma is blackish brown. All sternites are whitish yellow. Hind femur is black..... *Tenthredo sinotemula* Haris, 2009

The new species is also similar to the Palaearctic *Tenthredo temula* Scopoli, 1763 (and related species). In these species, tergite 7 always black (yellow in the new species) and pedicel is black, tibiae are yellow with black apex (in the new species both are red).

Table A

Antenna is black with white apex (last apical 2 segments may be black), in several species the apical white segments with longitudinal black line. Body is black or rusty brownish red. Abdomen is red or red with basal tergites or black with middle red band. Mesonotum is densely punctured matt. First tergite(s) frequently with white lateral spots. Wings hyaline.

1 (2) Base colour of abdomen is black with bluish or violet lustre (*Tenthredo variicolor* group). 4 species not discussed here: *Tenthredo variicolor* Malaise, 1945; *Tenthredo seriemaculata* Malaise, 1945; *Tenthredo breviserrata* Wei, 1998 and *Tenthredo multi-maculata* Wei, 2002

2 (3) Base colour is different, (only 1 species is with metallic lustre but it is restricted to last 4 apical tergites).

3 (2) Abdomen is red and black or dominantly red.

4 (15) Mesoscutellum is not black, mostly pale: white or yellowish white or black with large central white spot (in 1-1 species it is red or brownish yellow).

5 (6) Mesoscutellum and clypeus is red-fulvous. Apical abdominal segments are black with faint purplish tinge. Otherwise abdomen is fulvous. Apical third of hind femur black *Tenthredo hingstoni* Malaise, 1945

6 (5) Mesoscutellum is not red. Pale, mostly white (in one species brownish yellow).

5(6) Pale apical part of antenna with longitudinal black line. (All femora are ferruginous frequently stripped with black. Head is pale with large ocellar spot leaving wide pale inner orbit which is confluent with pale temples. Abdomen is ferruginous except blackish anterior 2/3 of propodeum and medial spot on tergite 2.)

..... *Tenthredo waltoni* Malaise, 1945

6 (5) Pale apical part of antenna without longitudinal black line.

7 (10) Propodeum (tergite 1) and tergite 2 like total abdomen red.

8 (9) Head is ferruginous without any black frontal spot. Tergites 3-7 with pair of

obscure black spots. Femora without black band. Dominantly dark reddish brown only with few white and black spots.

.....*Tenthredo rufoglabrata* Wei, 1998
 9 (8) Head is ferruginous with large black frontal spot. Tergites without any pair of black spots. Hind femur with longitudinal black line. White: mandible, narrow inner orbit, gena; black: large frontal spot from supraantennal tubercles till hypothetic hind margin of head not touching eyes.....*Tenthredo becvari* sp. n.

10 (7) At least propodeum (tergite1) is black, mostly tergite 2 is also black or dominantly black.

11 (12) Mesonotum and also abdomen are dominantly brownish yellow, abdominal apex is black. Head is with black frontal spot which is far from eyes, hardly covering the temples but covering the vertex.....*Tenthredo clavata* Saini, 2007

12 (11) Mesonotum is dominantly black, abdomen is red or red and black.

13 (14) Upper 2/3 of mesopleuron is white, mesosternum is black. Legs are brownish white with black longitudinal line. First abdominal tergite is black, abdomen till 5th tergite is gradually turning from black to reddish brown.

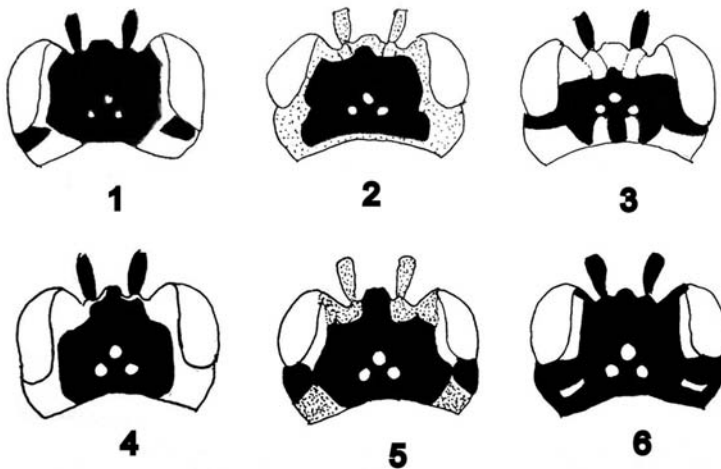


Fig. 1: Head of *Tenthredo sinospeciosa* spec. nov.; Fig. 2: Head of *Tenthredo kucerai* spec. nov.; Fig. 3: Head of *Tenthredo sinoflava* spec. nov.; Fig. 4: Head of *Tenthredo becvari* spec. nov.; Fig. 5: Head of *Tenthredo ferroyunnanensis* spec. nov.; Fig. 6: Head of *Tenthredo ferruginea* Schrank colour var.

.....*Tenthredo yunanensis* Haris and Roller, 1998
 14 (13) Mesopleuron and mesosternum are black upper part of mesopleuron with reddish brown spot. (otherwise it is close to *T. waltoni* Malaise, but *T. ferroyunnanensis* has base colour of head dark ferruginous not white and frontal spot is much wider and different in shape). Thorax black; white: wide hind margin of pronotum, tegula, mesoscutellum (but not mesoscutellar appendage) and central triangular spot on metascutellum. Ferruginous: large spot on upper part of mesopleuron, tegula. Legs entirely ferruginous only femora with longitudinal black line. Abdomen ferruginous, 1st tergite (propodeum) and most of 2nd tergite (except ferruginous wide hind margin) black.

.....*Tenthredo ferroyunnanensis* sp. n.
 15 (4) Mesoscutellum is black.

16 (31) Hind margin of pronotum and frequently tegula are pale, mostly white.

17 (26) Base colour of abdomen is red. Abdomen is never black-red-black with red middle segments. Propodeum is always black, other tergites are more or less covered with

black, sometimes only apical half of abdominal tergites remain red or brownish red.

18 (19) Abdominal tergites 1-6 are black with central red margins on tergites 3-6, apex of abdomen is reddish brown. Head is dark reddish brown; black: large frontal spot from antennae till hind margin of head not reaching eyes but covering vertex and temples. Clypeus brown, labrum black. Scape also reddish brown.

.....*Tenthredo rubrolineata* sp. n.

19 (18) Abdominal tergites are differently coloured.

20 (21) 1st and 2nd tergites are black the others are coloured with suffused blackish shade more or less covering the brown ground-colour, apical tergites brown. Abdominal sternites and ovipositor are brownish white. Head brown with large black dorsal spot. Mesonotum and all scutelli black.....*Tenthredo minutosimplicis* Haris, 2004

21 (20) Differently coloured. Propodeum (sometimes tergite2) is black but other tergites are entirely or dominantly red.

22 (23) Propodeum and tergite 2 are black. Other parts of abdomen is red. Head below antennal sockets, narrow inner orbits and occipital carina are yellowish white. Femora and tibiae are red, femora with longitudinal black line.....*Tenthredo qinlingia* Wei, 1998

23 (22) Tergite 2 is always red.

24 (25) Abdomen is brownish red. Propodeum is black, further black are: large reverse subtriangular spot on tergite 2, apical half of tergite 7, tergites 8 and 9 entirely. Mesopleuron is brownish red with dorso-ventral black line. (Flagellar segments of antenna are black above and white below).....*Tenthredo yunningsiensis* Haris, 2009

25 (24) Abdomen is brownish red, propodeum black, other tergites each with a diminishing paired black spots forming a diminishing black band between the red middle part and lateral white bands. Mesopleuron is with an anterior pale spot. (Only apical white antennal segments may stripped with black.).....*Tenthredo pseudoferruginea* Malaise, 1945

26 (17) Basal abdominal tergites are black, or dominantly black, middle tergites (3-5) are entirely red and apical tergites are dominantly black, abdomen with middle red band.

27 (30) Tibiae are white.

28 (29) Clypeus and labrum are black. Lateral sides of tergite1 and 2 with white spots. Apical tergites are entirely black

.....*Tenthredo ferruginea* Schrank, 1776 (local colour form)

29 (28) Clypeus is white with narrow black basal margin and with 2 small black spots. Labrum is white. Lateral sides of tergite 2 is red, other tergites are black, 8th and 9th tergites each with 2 whitish brown spots.....*Tenthredo sinosimplex* Haris, 2009

30 (27) Tibiae are black. Clypeus and labrum are dark brown. Deflexed sides of tergite 6 are reddish brown.....*Tenthredo hajeki* Haris & Roller, 2007

31 (16) Pronotum and tegula are black. (Entire thorax incl. pronotum and tegula are black, abdomen from segment 3 is red.

31 (32) Tergite 1 and 2 without lateral white spots. Clypeus more or less white or brown but without white spots: *Tenthredo rubiobitava* Wei, 2002 and *Tenthredo ferruginiella* Wei, 2002

32 (31) At least tergite 1 with lateral white spot.

33 (36) White apical antennal segments with black line.

34 (35) Lateral lobe of mesonotum shiny. Hind femur red, inner side with black line (sometimes entirely black). Tergite 1 with lateral white spot, red tergite 3-4 and segments 5-6, white segments with black line.....*Tenthredo ino* Zhelochovtsev, 1961

35 (34) Mesonotum entirely matt. Otherwise similar to *T. solitaria* Scopoli. Hind femur red without black line.....*Tenthredo solitaria xyloa* (Jakovlev, 1891)

36 (33) White apical antennal segments without black line

37 (38) Tergite 1-3 with lateral white spots. Clypeus with 2 yellowish white spot. Femora black. Abdominal tergites from tergite 3 entirely red.

.....*Tenthredo sinorufa* sp. n.

38 (37) Only tergite 1 with lateral white spot. Clypeus without 2 spots (clypeus white or black)

- 39 (40) Metapleuron with white spot above hind coxa.
 40 (41) Clypeus white. Two species: *Tenthredo sobrina* Eversmann, 1847 (Mesonotum shiny. Hind femur mostly red.) and *Tenthredo solitaria solitaria* Scopoli, 1763 (Mesonotum matt. Hind femur black).
 41 (40) Clypeus black..... *Tenthredo pamirensis pamirensis* Jakowlew, 1888
 40 (39) Metapleuron without white spot. Clypeus white. First tergite with lateral white spot. Variable in colour, melanic forms may occur.
*Tenthredo oryssoides* Jakowlew, 1888

Table B

Antenna is black with white apex (last apical 2 segments may be black, longitudinal black line on white antennal segments may occur). Body is black and white or black and green fading to straw, sometimes reddish brown on head or thorax. Abdomen dominantly black frequently with pale (white, yellowish white or straw colored) pattern, never colored with red (or at most on apical 2 segments). Mesonotum is densely punctured matt. Wings hyaline. Abdomen never with bluish or purplish lustre and wings never with infusate band.

- 1 (4) Mesonotal middle lobe is not entirely black (at least with pale hind apex or V-shaded margin or the middle part of anterior lobe is pale (and also lateral lobes are partly).
 2 (3) Mesopleuron and mesepisternum are reddish brown, abdominal tergites are entirely black except anterior and posterior margins of propodeum. Middle part of mesonotal lobes are yellowish brown..... *Tenthredo kucerai* sp. n.
 3 (2) Mesopleuron and/or mesepisternum is pale or at least one of them with large pale spot on the black ground color. Abdominal tergites are black but always with more pale spots. Anterior mesonotal lobe only with pale apex or with pale V-margin never yellowish brown in middle. More species, not discussed in details: *Tenthredo habenata* Konow, 1907; *Tenthredo pyramidata* Konow, 1898; *Tenthredo beesoni* (Malaise, 1934); *Tenthredo gangriaensis* Singh and Saini, 1988; *Tenthredo malkiati* Vasu, 2004 and *Tenthredo sanctapetronellae* Haris, 2007.
 4 (1) Mesonotal middle lobe is entirely black.
 5 (10) Hind tibia is red, reddish brown or brown.
 6 (7) Mesopleuron, mesepisternum are brownish red, abdomen is black only with lateral white spots. Similar to *T. variicolor* Malaise.....*Tenthredo rubiopicilina* Wei, 2002
 7 (6) Mesopleuron, mesepisternum and mesosternum are black.
 8 (9) Scape is black. Tergites 1-5 with wide central hind margins.
*Tenthredo memoriaescalerae* Haris, 2004
 9 (8) Scape is red. Tergites 3 and 8 are entirely white (white further: triangular spot on tergite 1, lateral spot on tergite 2, spots on tergite 4, 5 and 7).
*Tenthredo tricoloritonkinensis* Haris, 2006
 10 (5) Hind tibia is white or yellowish white with or without apical black spot.
 11 (12) The large white spot on temples and wide pale inner orbit are confluent. (Mesonotal anterior lobe is entirely black, tergites 2-7 are black with yellowish triangular spots).....*Tenthredo vatsi* Saini and Vasu, 1998
 12 (11) White spot on temples is completely separated from pale inner orbit by black color.
 13 (14) Apex of anterior mesonotal lobes are white, tergites 2-7 with yellowish white hind margin. Hind tibia with wide black apex.....*Tenthredo imbricata* Muche, 1983
 14 (13) Anterior mesonotal lobe is entirely black. Apical 2/3 of tergites 3 and 4 are yellow and tergites 2-7 are without yellowish white hind margin. Hind tibia is without black apex.....*Tenthredo sinospeciosa* sp. n.



Fig. 7: Holotype of *Tenthredo becvari* spec. nov.



Fig. 8: Holtype of *Tenthredo ferroyunnanensis* spec. nov.



Fig. 9: Holotype of *Tenthredo rubrolineata* spec. nov.



Fig. 10. *Tenthredo ferruginea* Schrank, 1776 (local color variation)



Fig. 11: Holotype of *Tenthredo sinorufa* spec. nov.



Fig. 12: Holotype of *Tenthredo sinospeciosa* spec. nov.



Fig. 13: Holotype of *Tenthredo kucerai* spec. nov.

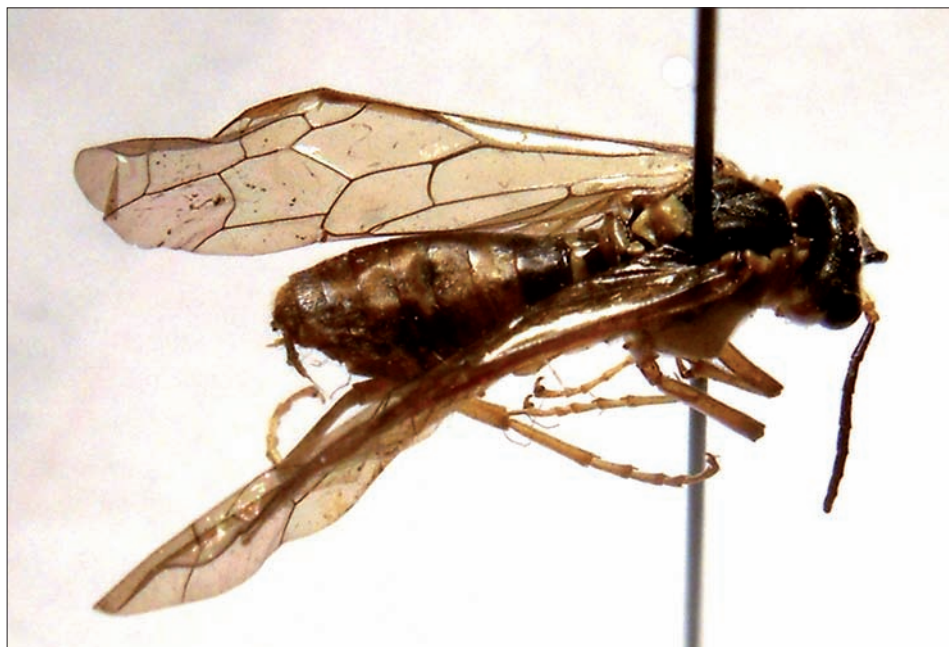


Fig. 14: Holotype of *Tenthredo sinoabrahami* spec. nov.



Fig. 15: Holotype of *Tenthredo sinomirabilis* spec. nov.



Fig. 16: Holotype of *Tenthredo sinoflava* spec. nov.



Fig. 17: Holotype of *Tenthredo sinopotanini* spec. nov.



Fig. 18: Holotype of *Tenthredo rubropedicella* spec. nov.

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