

Sawflies from China (Hymenoptera: Tenthredinidae)

ATTILA HARIS

H-1076 Budapest, Garay u. 19. 2/20.

email: attilaharis@yahoo.com

HARIS, A.: *Sawflies from China (Hymenoptera: Tenthredinidae)*.

Abstract: Seven new sawfly species are described from Shaanxi, Sichuan and Yunnan provinces of China, namely *Asiemphytus marshali* spec. nov., *Empronus sichuanensis* spec. nov., *Neothrinax albolineata* spec. nov., *Taxoblenus rufoyunnanensis* spec. nov., *Taxonus flavoantennatus* spec. nov., *Eurhadinoceraea sazanovi* spec. nov. and *Tenthredo dongchuanensis* spec. nov. and compared to *Asiemphytus flavicornis* Wei, 1997, *Empronus kalatopenensis* M.S. Saini & Deep, 1992, *Neothrinax incisus* Wei, 1998, *Neothrinax formosana* Rohwer 1916, *Neothrinax phoupanensis* Haris, 2014, *Taxoblenus sinicus* Wei and Nie, 1999, *Taxoblenus longicornis* Wei and Nie, 1999, *Taxoblenus rufoclypeus* Wei & Nie, 1999, *Taxonus aterritina* Wei, 1997, *Taxonus zhangii* (Wei, 1997), *Taxonus leucotrochantera* (Wei, 1997), *Tenthredo katoi* Takeuchi, 1929 and *Tenthredo rectangulata* Vasu & M.S. Saini, 1999. A new color variation of *Eriocampa notoana* Togashi, 1981 is described from Taiwan.

Keywords: Hymenoptera, Tenthredinidae, China, new species

Introduction

This is my 12th contribution to the knowledge of the sawfly fauna of China (HARIS 1996, 2000, 2007, 2008, 2009, 2012, and 2014, HARIS & ROLLER 1998, 1999, a,b, 2007). The known Symphyta species from China exceeds the 1717 species which were listed in WEI et al. in 2006. With this amount of species, China and Russia have the most diverse sawfly fauna in the world. The known species is still increasing due to the research group work and worked in China namely: Chu, Xiao, Wei, Zhou, Nie, Ouyang, Hunag, Wu, He, Shu, Huang, Chen, Deng, Ding, Wen, Wu, Sun, Li, Zhong, Zhang, Zhu, Xu, Yang and Yuan. The latest checklist were published by WEI et al. 2006.

Material and methods

The identified Chinese material was collected in Yunnan, Sichuan and Shaanxi provinces of China by I. H. Marshal, Zd. Jindra, M. Tryzna, J. Halada and S. Becvar between 1992 and 2012.

For the identification, the following books, monographs and papers were consulted: MALAISE 1944, 1945, 1947, 1961, 1963, SAINI 2006a, b, 2007, SAINI & DEEP 1992, TAKEUCHI 1929, 1941, WEI & NIE 1999, WEI 1997a, b, c, 1999, WEI et al. 1997. Genitalia were dissected and figured. Holotypes are deposited in the Biologiezentrum Linz, Austria.

Description of the new species

Asiemphytus marshali spec. nov.

(Figs. 1, 2, 11 and 18)

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

Head ocker yellow; brown: area between 3 ocelli, small spots above antennae, central part of anterior mesonotal lobes; white: clypeus labrum. Antenna ocker yellow, apical 3 joints white. Thorax and abdomen ocker yellow; black: small spot between cenchri, and suffused spot on mesosternum; pale yellow: hind margin of pronotum, tegulae and abdominal tergites from tergite 4. Whole anterior 4 legs pale yellow with suffused tarsi, hind leg ocker yellow. Wings hyaline. Costa, subcosta dark yellow, stigma pale transparent yellow with dark yellow dorsal margin, veins brown. Anterior wing with 3 cubital cells. Basal and cubital veins meet in one point on subcosta. First recurrent vein joins to basal fifth of first discoidal cell. Hind wing with one closed middle cell. Anal vein of hind wing with short but clear petiole. Head strongly contracted behind eyes and rounded at hind corners of temples. OOL : POL : OCL: 10 : 3 : 11. Ratio of antennal segments: 14 : 7 : 25 : 32 : 19 : 22 : .15 : 12 : 12. Apical 3 antennal joints flattened. Antenna long, about as long as head, thorax and first 2 abdominal segments combined. Clypeus deeply and roundly emarginated, clypeal emargination about 0.65x as deep as clypeal median length. Gena linear. Postoccipital carina reaching up to 2/3 of eye. Postocellar furrows deep and parallel reaching hypothetic hind margin of head. Pentagonal frontal area not elevated and not bordered by ridges. Head smooth and shiny. Mesonotal lobes with shallow, small, moderately deep and dense punctures, shiny. Posterior part of mesoscutellum with deep, moderately large and moderately dense punctures, shiny. Mesoscutellar appendage with few deep, sporadic and moderately large punctures. Mesopleuron and mesepisternum with minute, moderately dense punctures and sporadic moderately deep, moderately large punctures, shiny. Mesoscutellum flat. Prepectus missing. Claw with inner tooth about half as large as apical, basal lobe not visible. Penis valve in Fig. 11. Length: 9.1 mm.

In WEI 1997c also in MALAISE 1963 this species runs to genus *Asiemphytus* Malaise, 1947 having Cell M in hind wing closed, claw with subapical tooth, basal lobe is missing (if present it is very minute, invisible) number of radial cells are 3, scape is longer than pedicell, basitarsi somewhat shorter than other tarsal segments combined including claw, clypeus is widely and deeply emarginated, anterior tibial spur is simple. The closest relative is *Asiemphytus rufiscapus* Wei, 1997 but penis valve completely different as in Fig. 18 in WEI 1997, compare with Fig. 11.

Empronus sichuanensis spec. nov.

(Figs. 3, 12 and 19)

Holotype: male, China, Sichuan prov., road Meigu-Leibo vill., pass 15 km NE of Meigu, 28° 25' N 103° 17' E, Dailang Shan Mts., 09-11. June 1998, Zd. Jindra and M. Tryzna lgt.

Head, antenna, palpi, mouthparts, thorax black. Wings brown infusate, costa, subcosta, stigma and veins black. Legs black, anterior side of first tibia dark brown, hind



Fig. 1: *Asiemphytus marshali* spec. nov.



Fig. 2: *Asiemphytus marshali* spec. nov. in lateral view



Fig. 3: *Empronus sichuanensis* spec. nov.



Fig. 4: *Neothrinax albolineata* spec. nov.

coxa, trochanter and femur reddish yellow. Abdomen reddish yellow, base of propodeum black. Head smooth and shiny, gently contracted behind eyes. Gena linear. Clypeus extremely shallowly emarginated, subtruncate. Anterior margin of labrum slightly emarginated subtruncate. Clypeus and anterior ocellus connected by 2 large, moderately deep pits gently separated by a shallow ridge from each other. Postoccipital carina missing. OOL : POL : OCL: 10 : 5 : 11. Ratios of antennal segments: 7 : 6 : 29 : 29 : 23 : 20 : 18 : 18 : 16. Antenna as long as head, thorax and first 4 abdominal segments combined. Anterior wing with 4 cubital cells. Angle of crossvein of anterior anal cell about 45°. Hind wing with one closed middle cell. Anal cell of hind wing with long petiole, nervellus runs into petiole, angle little larger than perpendicular angle. Thorax smooth and shiny. Mesoscutellum flat. Presternal furrow missing. Abdomen smooth and shiny. Length of inner hind tibial spur: hind basitarsus: 9 : 30. Claw with long subapical tooth, shorter than apical, basal lobe missing. Penis valve in Fig. 12. Length: 7.1 mm.

The closest relative is *Empronus kalatopensis* M.S. Saini & Deep, 1992. *E. kalatopensis* has thorax variously but extensively yellow but it is completely black in the new species. Penis valves are also different, compare Fig. 12 with Fig. 361 in SAINI 2006a.

The new species runs to genus *Empronus* Malaise, 1935 in SAINI 2006a having the following characters: hind wing with one closed middle cell, cell M in hind wing is closed, clypeus is faintly emarginate, anal cell with long petiole, malar space is nearly as wide as median ocellus, anterior wing with 4 cubital cells, tarsal claw without basal lobe, subapical tooth is much shorter than apical, nervellus runs into the middle of first discoidal cell.

The difference from other typical *Empronus* species: flagellum not compressed, also hind coxa is elongated but not extremely elongated as is *Eusunoxa*, *Beleses* etc. .

Eriocampa notoana Togashi, 1981

Southern colour variation with red pronotum and tegula.

Male, Taiwan, Taichung pr., 15 km W. Lishan, 1410 m, 24° 258' N 121° 211' E, 25. 05. 2012, J. Halada leg.

Body, including mouthparts, antenna and legs black; red: tegula and pronotum, reddish yellow: apical third of anterior femur and anterior tibia entirely. Wings hyaline, stigma pale yellowish brown, costa, subcosta and veins black. Temples, vertex and frontal area deeply and moderately densely punctured with large punctures, shiny. Inner orbit very densely and moderately roughly punctured, matt. Clypeus widely and slightly emarginated, clypeal emargination about 0.3x as deep as clypeal median length. Gena linear, eyes large. OOL : POL : OCL: 6 : 4 : 7. Ratios of antennal segments: 8 : 7 : 22 : 12 : 11 : 9 : 8 : 7 : 6. Antenna short and relatively stout, as long as head and thorax combined till end of mesoscutellum. Postoccipital carina well developed reaching up to postocellar furrows. Pentagonal frontal area well marked with ridges behind but frontal ridge hardly visible, nearly absent. Anterior lobe of mesonotum nearly smooth and shiny with sporadic small punctures. Lateral mesonotal lobes moderately shiny with small, moderately deep and moderately dense punctures, shiny space between punctures 1-4x as large as a diameter of a punctures, punctures uneven. Mesoscutellum flat and angular margin triangularly protrudent. Mesoscutellum with large, very deep and very dense punctures, anterior quarter of mesoscutellum smooth and shiny. Mesoscutellar appendage and

metascutellum nearly smooth and shiny with few isolated deep punctures. Mesopleuron with very deep and rough punctures. Mesepisternum with small, moderately dense punctures. Propodeum smooth and shiny. Other tergites with coriaceous surface sculpture. Length of inner hind tibial spur : length of hind basitarsus: 9 : 24. Inner tooth of claw shorter than apical.

***Neothrinax albolineata* spec. nov.**

(Figs. 4, 14 and 21)

Holotype: female, China, Yunnan prov., Dali, 31. 05. 1995, above lake Erhai, lgt. S. Becvar.

Body black, white: labrum, clypeus, palpi, mandible (except apex), very narrow ring on apex of scape, wide hind margin of pronotum, tegulae, parapteron, horizontal band on mesopleuron, small spot on anterior part of mesoscutellum, white lateral bands on abdomen (not visible above), last tergite and legs entirely (except black 2-5 tarsal tergites of middle and hind legs). Wings subhyaline, costa, subcosta, stigma and venation brownish black. First and second cubital vein nearly fused (crossvein between them hardly visible), anal vein of fore wing without crossvein. Anal cell of hind wing sessile. Hind wing with 2 closed middle cell. Gena about 2/3 as wide as middle ocellus. Antenna about as long as head and thorax till middle of mesoscutellum, short and relatively thick. Ratios of antennal segments: 6 : 6 : 16 : 12 : 9 : 7 : 5 : 5 : 4. OOL : POL : OCL: 10 : 7 : 10. Head nearly smooth and shiny with some shallow wrinkles. Temples contracted behind eyes. Pentagonal frontal area sunken and marked around by moderately developed ridges. Clypeus slightly roundly emarginated, not deeper than 0.2x of clypeal median length. Inner margins of eyes contracted. Head with short postoccipital carina about as long as 1/3 of hind orbit. Postocellar furrows deep, reaching hypothetic hind margin of head and divergent backwards. Thorax smooth and shiny. Mesoscutellum flat. Prepectus missing. Propodeum nearly smooth and shiny, other tergites with fine undefined surface sculpture, shiny. Length of inner hind tibial spur: hind basitarsus: 7 : 19. Length: 7.1 mm.

The new species related to *Neothrinax incisus* Wei, 1998, however, *N. incisus* has erect crossvein in the anal cell of fore wing. In the new species anal cell is without cross vein. Lateral sides of the abdomen in the new species with wide white bands. They are missing in *N. incisus*. In Malaise, 1944, the new species runs to *Neothrinax formosana* Rohwer 1916. *N. formosana* is extremely white even the basal tergites of abdomen, scape and apex of antenna pale. Larger species, 9.0 mm. The new species has basal abdominal tergites black, the total antenna is black. Smaller, 7.1 mm. *Neothrinax phoupanensis* Haris, 2014 is also similar to this species, however, in *N. phoupanensis* the 2 wide lateroventral bands of abdomen are completely missing.

***Taxoblenus rufoyunnanensis* spec. nov.**

(Figs. 5, 9, 15 and 20)

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

Body black; white: clypeus, labrum, basal half of mandible, hind margin of pronotum and tegula; red: basal joint of palpi, abdominal tergites 2-5, abdominal sternites 2-4, apices of anterior and middle femora, all tibiae and all tarsi. Wings hyaline, costa, sub-

costa, stigma and veins brown, basal half of stigma and narrow apex of subcosta yellow. Hind wing without closed middle cells. Anal cell petiolate. Anterior wings with 4 cubital cells. OOL : POL : OCL: 32 : 10 : 31, Ratios of antennal segments: 17 : 7 : 60 : 70 : 68 : 59 : 50 : ? : ?. Antenna long and slender. Pedicell as long as wide. Head deeply and roughly punctured, hardly shiny, outer half of temples deeply and sporadically punctured, shiny. Head dilated than contracted behind eyes. Postoccipital carina reach up to upper corner of eyes. Gena wide, about 2x as wide as diameter of anterior ocellus. Clypeus deeply and roundly emarginated, clypeal emargination about 0.65x as deep as clypeal median length. Temples nearly as wide as eye: 11 : 10. Postocellar furrow slightly divergent. Frontal area not marked by ridges, not sunken. Anterior lobe of mesonotum with moderately dense, moderately deep and fine punctures, moderately shiny. Lateral mesonotal lobes with sporadic punctures, shiny. Mesoscutellum and mesoscutellar appendage very densely punctured with moderately large punctures, matt. Metascutellum with fine wrinkled surface sculpture, moderately shiny. Postnotum of metanotum smooth and shiny, laterally with fine horizontal wrinkles. Mesopleuron and mesepisternum with large, deep and rough punctures, matt. Mesosternum smooth and shiny. Mesoscutellum flat without carina. Prepectus missing. Abdominal tergites nearly smooth and shiny, with fine surface sculpture. Subapical tooth of claws well developed about 3/4x as long as apical. Sawsheath in lateral view rounded and gently triangularly projected. Sawsheath in Fig. 15, middle serrulae in Fig. 10. Length: 10.5 mm.

Closely related species:

Taxoblenus sinicus Wei and Nie, 1999 has labrum, clypeus and tibiae and tarsi black, stigma is blackish brown and pronotum and tegulae are black (WEI & NIE 1999). The new species has all tibiae and all tarsi red, labrum and clypeus are white, stigma is bicolor (yellow and brown), hind margin of pronotum and tegula white.

Taxoblenus longicornis Wei and Nie, 1999 has inner tooth of claws are minute, it is small, 6.5 mm. species and abdominal tergites with black central spots (WEI & NIE 1999). The new species is large, abdominal tergites without central black spots and inner tooth of claws are large, about 3/4x as long as apical tooth.

The new species has serrulae without any subbasal tooth, the other red banded species mentioned above have 2-6 subbasal teeth on serrulae.

Serrulae and colour resembles to *Taxoblenus rufoclypeus* Wei & Nie, 1999. However the hairs on serrulae of the new species is extremely long, very short in *T. rufoclypeus*. Inner tooth of claw in the new species well developed, about 0.7-0.8 as long as apical tooth. In *T. rufoclypeus*, subapical tooth is small.

***Taxonus flavoantennatus* spec. nov.**
(Figs. 6 and 13)

Holotype: male, China, Shaanxi, Qinling Mts., 2000-2500 m, Xunyangba (12 km SW), 04-18. 06. 1998, I. H. Marshall leg.

Head completely black including mouthparts. Antenna brownish yellow, scape, pedicel and dorsal surface of antennal segment 3 black. Thorax, abdomen and legs black, all tibiae and all tarsi brown. Wings hyaline, costa, subcosta, veins brown, stigma blackish

brown with pale brown basal quarter. Wings hyaline. Hind wing without marginal vein. Hind wing with one closed middle cell. Anal cell of hind wing with short petiole, nervellus of hind wing meet apex of anal cell. Head roughly, very densely punctured all over with deep punctures, matt. Frontal area bordered with 2 straight lateral furrow. Head gently narrowed behind eye. Length of eye above : width of temple: 20 : 15. OOL : POL : OCL: 15 : 5 : 17. Ratios of antennal segments: 10 : 6 : 23 : 17 : 14 : 12 : 11 : 10 : 10. Antenna about as long as head and thorax combined without propodeum. Postoccipital carina reaching up to vertex. Clypeus very deeply emarginated, clypeal emargination about 3/4x as deep as median clypeal length. Gena linear. Anterior lobe of mesonotum very densely and very deeply punctured without shiny interspaces. Lateral lobes of mesonotum deeply and densely punctured with interspaces about as large as a puncture. Mesoscutellum and mesoscutellar appendage very densely and very deeply, roughly punctured. Metascutellum with sporadic deep punctures. Mesopleuron and mesepisternum with large, rough and very dense punctures, matt. Abdominal tergites shiny with fine surface sculpture. Inner tooth of claw about half as long as apical, basal lobe not visible. Penis valve in Fig. 13. Length: 8.0 mm.

The new species is related to *Taxonus aterritina* Wei, 1997 (WEI 1997). *Taxonus aterritina* Wei has hind wing with closed marginal vein and antenna black. The new species has hind wing without marginal vein and antenna is dominantly brownish yellow.

The new species is also related to *Taxonus zhangii* (Wei, 1997) but penis valve is different, compare in Fig. 7 WEI 1997 and Fig. 13. Colour of antenna is also different in these 2 species.

Taxonus leucotrochantera (Wei, 1997) is also similar to the new species but this species has shiny mesoscutellum and penis valve is also different, compare Fig. 10 in WEI 1997 and Fig. 13.

***Eurhadinoceraea sazanovi* spec. nov.**

(Figs. 7, 17 and 22)

Holotype: female, China, Yunnan, Lijian, 2500 m, 06. 07. 1998, leg. S. Sazanov.

Head, including mouthparts and antenna entirely black. Thorax reddish orange; black: metanotum, metascutellum and anterior half of propodeum. Basal halves of coxae yellow otherwise legs entirely black. Stigma, costa, subcosta and veins black. Wings infusate. Abdomen yellow. Ovipositor yellow, valvula 3 black. OOL : POL : OCL: 14 : 7 : 11. Ratios of antennal segments: 7 : 5 : 20 : 15 : 13 : 11 : 11 : 10 : 10. Antenna as long as head and thorax combined without propodeum. Antenna thick, not flattened. Gena about 0.7x as wide as diameter of anterior ocellus. Antenna slightly emarginate-subtruncate. Clypeal emargination about 0.15x as deep as clypeal median length. Postgenal (postoccipital) carina reaching up to 1/3 of eyes. Vertex and temples smooth and shiny. Frontal area wrinkled. Frontal area pentagonal, emarginated by ridges. Postoccipital furrows deep and divergent, reaching hypothetic hind margin of head. Thorax smooth and shiny. Prepectus missing. Mesoscutellum flat. Anterior wing with 4 cubital cells. Basalis and first recurrent vein parallel. Basalis and cubital veins meet in one point on subcosta. Anall cell of anterior wing straight. Abdominal tergites smooth and shiny. Apical and subapical tooth of claw subequal. Basal lobe missing. Sawsheath in Fig. 17. Length: 9.4 mm.



Fig. 5: *Taxoblenus rufoyunnanensis* spec. nov.



Fig. 6: *Taxonus flavoantennatus* spec. nov.



Fig. 7: *Eurhadinoceraea sazanovi* spec. nov.



Fig. 8: *Tenthredo dongchuanensis* spec. nov.

The very special sawsheath differs (Fig. 17) the new species from all other *Eurhadinoceraea* Enslin, 1920 species.

***Tenthredo dongchuanensis* spec. nov.**
(Figs. 8 and 11)

Holotype: female, China, Yunnan, Dongchuan, 1500-3200 m, 26.07° N 103.14° E, 08. 06. - 03. 07. 1994. Leg. Vit. Kuban.

Head black; dark yellow: total clypeus, total labrum, outer surface of mandible, palpi, lower quarter of outer orbit, large spot behind eyes covering distal half of temples. Antenna black, dorsal side of scape and apical spot on pedicell dark yellow. Thorax black; dark yellow: wide pronotal margine, tegula and mesoscutellum. Legs black, dark yellow: anterior surface of tibiae and tarsi of anterior and middle legs, hind tibia entirely and ventral surface of hind tarsus. Anterior wing slightly infusate with dark brown strip covering entire radial cells, upper half of cubital cells, first discoidal cell and most of the submedian cell. Abdomen black, yellow: wide hind margine of tergite 3, large central spot on tergite 8 and narrow hind margine of tergite 9. Ovipositor entirely black. Head densely, deeply and roughly punctured all over, matt. Punctures on frontal area extremely large, crater like punctures. Gena about as large as diameter of anterior ocellus. OOL : POL : OCL: 23 : 4 : 13. Ratios of antennal segments: 12 : 8 : 30 : 18 : 16 : 13 : 11 : 10 : 10. Postocellar area length : width: 3 : 5. Antenna short and thick, about as long as head and thorax till anterior margin of mesoscutellum. Mesonotal lobe densely, minutely and deeply punctured. Interspace between punctures 0.5-1.0x as large as a puncture, shiny. Mesoscutellum smooth and shiny, mesoscutellar appendage smooth and shiny with few deep and large punctures. Metascutellum smooth and shiny. Mesopleuron and mesepisternum with rough, very dense, deep and moderately large punctures, matt. Upper half of mesopleuron with crater-like punctures. Mesoscutellum bluntly elevated without carina. Mesopleuron strongly and bluntly elevated. Mesosternum without thorn. Abdominal tergite matt with very dense, fine granulation, middle part of propodeum gently shiny. Second tergite without furrow. Claw without basal lobe, subapical tooth as long as apical. Middle serrulae in Fig. 11. Length: 11.0 mm.

Related species:

Tenthredo katoi Takeuchi, 1929: we have no information on its serrulae, but mesoscutellar appendage, postscutellum and posterior margin of metanotum, basal part of third tergite, sides of tergite 4, median part of apical tergites are black of the new species not yellow like in *Tenthredo katoi*.

Tenthredo rectangulata Vasu & M.S. Saini, 1999: serrulae completely different. Compare Fig. 11 with Saini, 2007, Fig. 451.

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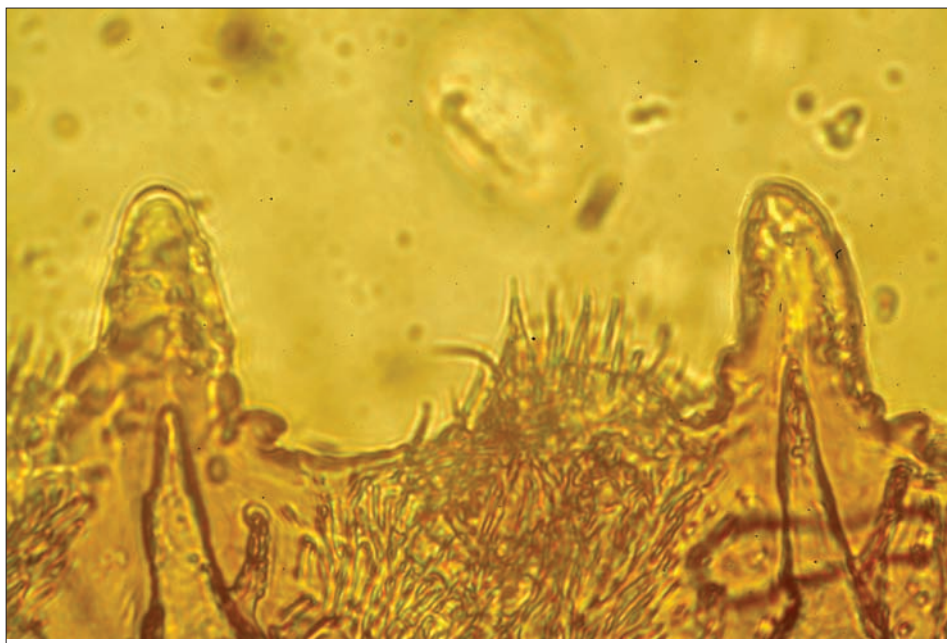


Fig. 9: middle serrulae of *Taxoblenus rufoyunnanensis* spec.nov.

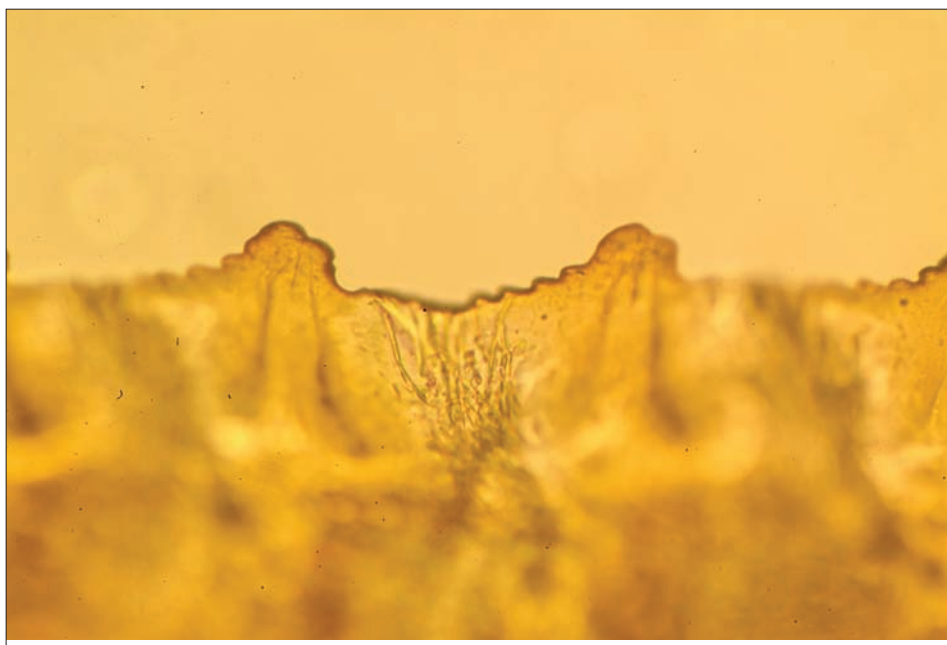


Fig. 10: middle serrulae of *Tenthredo dongchuanensis* spec. nov.

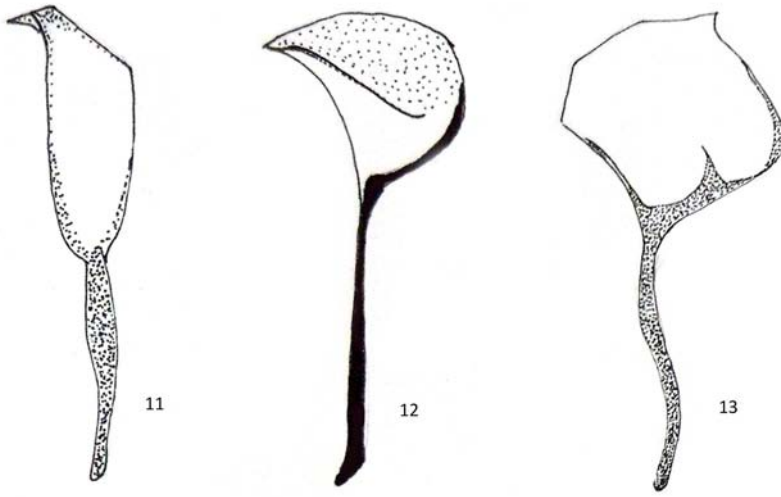


Fig. 11: Penis valve of *Asiemphytus marshali* spec. nov.; Fig. 12: Penis valve of *Empronus sichuanensis* spec. nov.; Fig. 13: Penis valve of *Taxonus flavoantennatus* spec. nov.

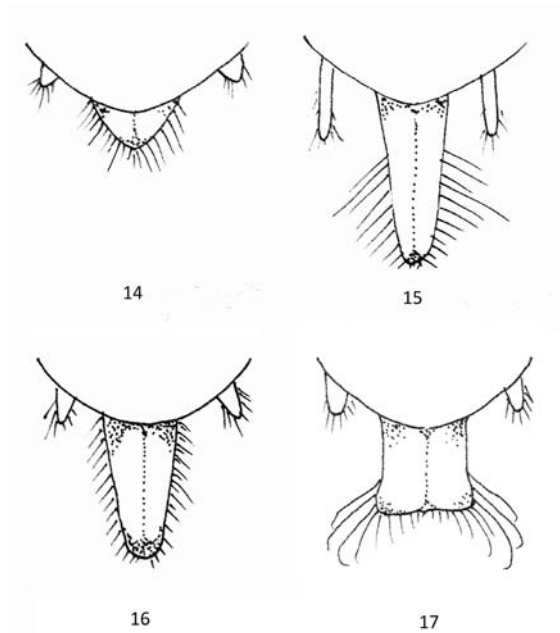


Fig. 14: Sawsheath of *Neothrinax albolineata* spec. nov.; Fig. 15: Sawsheath of *Taxoblenus rufoyunnanensis* spec. nov.; Fig. 16: Sawsheath of *Tenthredo dongchuanensis* spec. nov. ; Fig. 17: Sawsheath of *Eurhadinoceraea sazanovi* spec. nov.

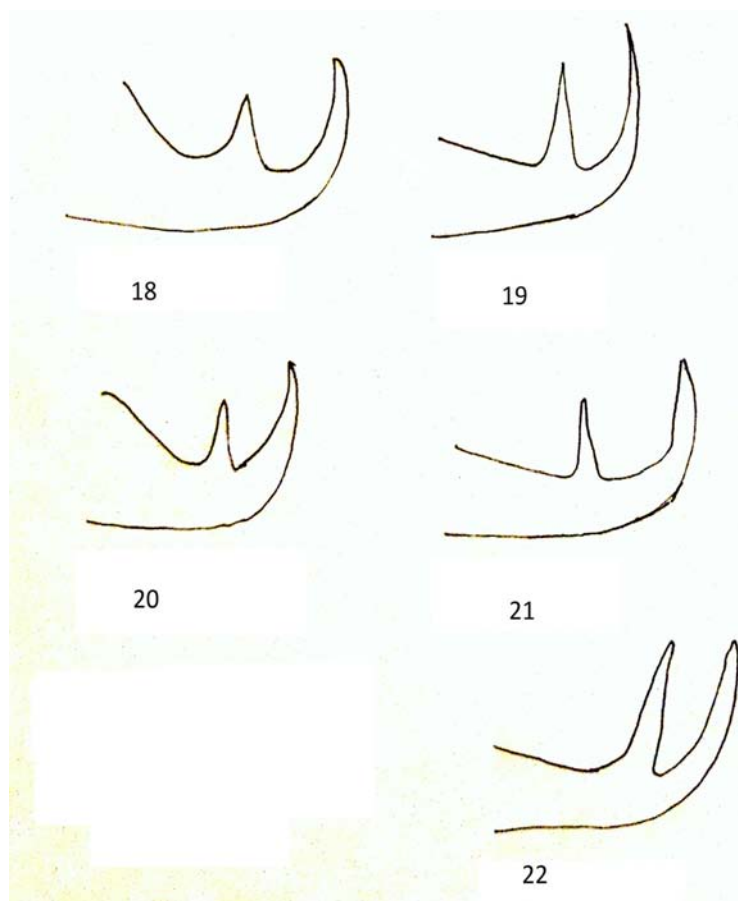


Fig. 18: Claw of *Asiemphytus marshali* spec. nov.; **Fig. 19:** Claw of *Empronus sichuanensis* spec. nov.; **Fig. 20:** Claw of *Taxoblenus rufoyunnanensis* spec. nov.; **Fig. 21:** Claw of *Neothrinax albolineata* spec. nov.; **Fig. 22:** Claw of *Eurhadinoceraea sazanovi* spec. nov.

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