FIVE NEW SPECIES OF THE GENUS *MICROPLITIS* (HYMENOPTERA: BRACONIDAE: MICROGASTRINAE) FROM CHINA

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ABSTRACT

Five new species of the genus *Microplitis* Foerster (Hymenoptera: Braconidae: Microgastrinae) are described and illustrated: *Microplitis basipallescentis*, **sp. nov.**, *M. brevispina*, **sp. nov.**, *M. carinata*, **sp. nov.**, *M. changbaishana*, **sp. nov.** and *M. crassiantenna*, **sp. nov**. All specimens are deposited in the College of Biosafety Science and Technology, Hunan Agricultural University, Changsha, China.

Key words: Braconidae; Microgastrinae; *Microplitis*; new species; China

RESUMEN

Se describen e ilustran cinco especies nuevas del género *Microplitis* Foerster (Hymenoptera: Braconidae: Microgastrinae): *Microplitis basipallescentis*, **sp. nov.**, *M. brevispina*, **sp. nov.**, *M. carinata*, **sp. nov.**, *M. changbaishana*, **sp. nov.** y *M. crassiantenna*, **sp. nov.** Todas las especimenes están depositadas en el College of Biosafety Science and Technology, Hunan Agricultural University, Changsha, China.

The genus *Microplitis* was established by Foerster in 1862 with the type species *Microgaster sordipes* Nees von Esenbeck. The characteristics of the genus include the following: areolet large, propodeum roughly sculptured, T1 with shape variable and often sculptured, and a weak suture between T2 and T3. All characters resemble those of the genus *Snellenius* except the notauli and propodeum more coarsely sculptured (Nixon 1965). However, that genus has a well-developed prepectal carina (Mason 1981; Austin et al. 1992). Papp (1979, 1986) placed those species of *Microplitis* with weak sculpture into a new genus *Glabromicroplitis* Papp. As morphologically intermediate species occur, Austin & Dangerfield (1993) downgraded *Glabromicroplitis* Papp to a synonym of *Microplitis*. Presently, 25 species of *Microplitis* are found in China (Xu & He 1999a, 1999b, 2000a, 2000b, 2000c, 2000d, 2000e, 2000f, 2000g,); (Song & Chen 2002, 2003, 2004); (Chen et al. 2004, 2006), including 5 new species to be described below.

Diagnosis: hypopygium often quite small, sometimes prolonged medially, sometimes truncate or slightly concave, and never centrally longitudinally striate. Ovipositor and ovipositor sheaths slightly protruding beyond tip of hypopygium. Ovipositor sheath arising from the bases of the 2nd valvulae, with a few hairs only at tip. The tip of T1 wide to narrow and often with sculpture and other tergites nearly smooth, T2 occasionally with weak sculpture, often with a weak trapezoidal central area, T3 usually longer than T2, with transverse suture between T2 and T3 usually absent or weak. Propodeum evenly curved in side view, nearly wholly rugose, often with medial longitudinal carina, never with trace of areola. Mesoscutum coarsely sculptured, seldom shiny, often with notauli which are sometimes strong. Scutellum with its posterior-oblique part rugose or punctate, and its posterior smooth band disconnected by a rugose patch in the middle.

Forewing with areolet; 1CU1 much shorter than 2CU1, r short. Vannal lobe of hind wing protruding with distinct fringe throughout. Hind coxa small, not protruding beyond T1. Hind tibia shorter than half of basitarsus. Labial palp usually of 3 segments, sometimes 4.

Distribution: cosmopolitan (Shenefelt 1973; Wilkinson 1930).

Biology: This is one of the most apomorphic genus of the subfamily Microgastrinae. All are endoparasitic and consume hemolymph and fat of the host, and carry a polydnavirus to interrupt host cellular immunoreaction. They are solitary or gregarious parasites, inserting eggs into the young larvae of exposed hosts. Larva usually with 3 instars, sometimes 4 instars, with last instar emerging from the last instar of host. For the solitary species, the host larva is only partially eaten, and the host survives for a period of time after parasite emergence. The cocoon of the

emerged parasitoid is formed beneath or beside the dead or dying host.

Many species of the genus are important natural enemies, and some have been used in biological control, such as *Microplitis mediator* (Haliday) against *Heliothis armigera* (Hübner) in China (Li Jiancheng et al. 2004). *Microplitis croceipes* (Cresson) has been studied for control of *Heliothis*, *Heliocoverpa* and other noctuids in America.

Microplitis basipallescentis, **sp. nov.** (Fig. 1)

Holotype: ♀, body length 2.6 mm, forewing length 3.1 mm.

Head: 1.8 * as wide as long and not broadening behind eye in dorsal view. Vertex and upper temple densely punctured; ocelli small, forming a high triangle, imaginary tangent of posterior margin of median ocellus far away from posterior ocelli, OD: OOL: POL = 0.4: 0.9: 1. Face approximately rectangular with dense hair, 1.4 × as wide as high, inner margins of eyes nearly parallel-sided. Antennae longer than body (20: 15), F12-15 approximately 2.7-2.5 × as long as wide and loosely connected.

Mesosoma: a bit narrower than head (5.2: 6), its length: width: height = 9: 5.2: 6. Pronotum weakly rugose-punctate with upper pronotal groove absent. Mesoscutum densely hairy and micropunctured; notauli indicated only by slight difference in rugosity/punctation, meeting posteriorly to form a slightly sunken area with punctures larger and better-defined; medial carina indistinct; scutellar sulcus wide, deep, divided by 5 carinae; scutellum weakly punctured, nearly smooth, posteriorly band rugose-punctate medially. Propodeum coarsely reticulate-rugose with distinct, percurrent medial longitudinal carina.

Wings: 1-R1 1.6 × and 1 × as long as the distance from itself to apex of marginal cell and the length of stigma, respectively; r approximately emerging from middle of stigma and about as long as 2-SR; areolet large, approximately triangular; first discal cell 1.3 × as wide as high, 1-CU1: 2-CU1 = 0.9: 2.2. Hind wing with 2a-M: 2r-m = 2: 1; margin of vannal lobe convex and hairy.

Legs: hind coxa approximately reaching middle of T2; both inner and outer spurs of hind tibiae subequal, 0.3 x as long as basitarsi.

Metasoma: longer than mesosoma (10.3: 9). T1 subparallel-sided, slightly narrowed at apex, its length: basal width: apical width = 3: 1.5: 1.3, evenly rugulose except for base (slightly depressed) and apical swelling smooth, T2 nearly trapezoidal, smooth, with its apical width: central length = 4: 1.3; T3: T2 = 2: 1.3, and T3 and the following tergites smooth, shiny with sparse hairs. Hypopygium small, slightly shorter than tip of metasoma, sightly acute at tip; ovipositor sheath approximately as long as second hind tarsus.

Color: black to reddish black. Antennae yellowish brown; maxillary palp, labial palp and tibial spurs pale yellow; tegula yellowish. Stigma yellowish brown with its small basal patch yellowish and semihyaline; veins brown except for C+SC+R pale yellow in basal-mid part; wings colorless. Legs generally yellow except for hind coxae reddish brown. T1 dark reddish brown to black, T2 and T3 unevenly yellowish brown, T4 and the following tergites reddish, yellowish brown, lateral membrane and ventral plate at base bright yellow.

Variation: antenna brown; hind tarsi grey brown; body length 2.5-3 mm.

Male: metasoma reddish brown except for T1 dark brown; antenna strong and long.

Holotype: ♀, Hongping, Shennongjia, Hubei, 14-Aug-1988, Yang Jianquan.

Paratype: 1♀, same as holotype; 1♀, Honghua, Shennogjia, Hubei, 3-Aug-1988, Huang Juchang; 1♀, Honghua, Shennongjia, 27-Aug-2000, Yang Jianquan; 3♀♀, Hongping, Shennongjia, Hubei, 4-Aug-1988, Huang Juchang; 1♀, Muyuping, Shennongjia, Hubei, 9-Aug-1988, Huang Juchang; 1♀, Muyuping, Shennongjia, Hubei, 24-Aug-2000, Yang Jianquan; 2♀♀, Tianmenya, Shennongjia, Hubei, 17-Aug-1988, Huang Juchang; 2♀♀, Tianmenya, Shennongjia, Hubei, 17-Aug-1988, Zhang Liqin; 5♂♂, Hongping, Shennongjia, Hubei, 14-Aug-1988, Yang Jianquan; 2♂♂, Hongping, Shennongjia, Hubei, 14-Aug-1988, Huang Juchang; 1♂, Muyuping, Shennongjia, Hubei, 5-Aug-1988, Huang Juchang.

Distribution: Hubei province, China.

Biology: unknown.

Etymology: the specific refers to the stigma with basal patch hyaline.

Notes: the new species resembles *Microplitis fujianica*, sp. nov.(for publishing), but has the following differences:

Microplitis basipallescentis, **sp. nov.**	*Microplitis fujianica*, **sp. nov.**
1. stigma with basal patch hyaline;	1. stigma with basal patch adiaphanous;
2. hind coxae reddish brown;	2. hind coxae yellow;
3. areolet approximately triangular.	3. areolet approximately quadrangular.

Microplitis brevispina, **sp. nov.** (Fig. 2)

Holotype: ♀, body length 3.1 mm, forewing length 2.9 mm.

Head: 1.9 × as wide as long in dorsal view. Vertex and upper temple sparsely and weakly punctate; ocelli forming a high triangle, imaginary tangent of posterior margin of median ocellus distant from posterior ocelli, OD: OOL: POL = 0.5: 0.8: 1.1. Head more or less circular in front view; face more or less dumbbell-shaped with dense

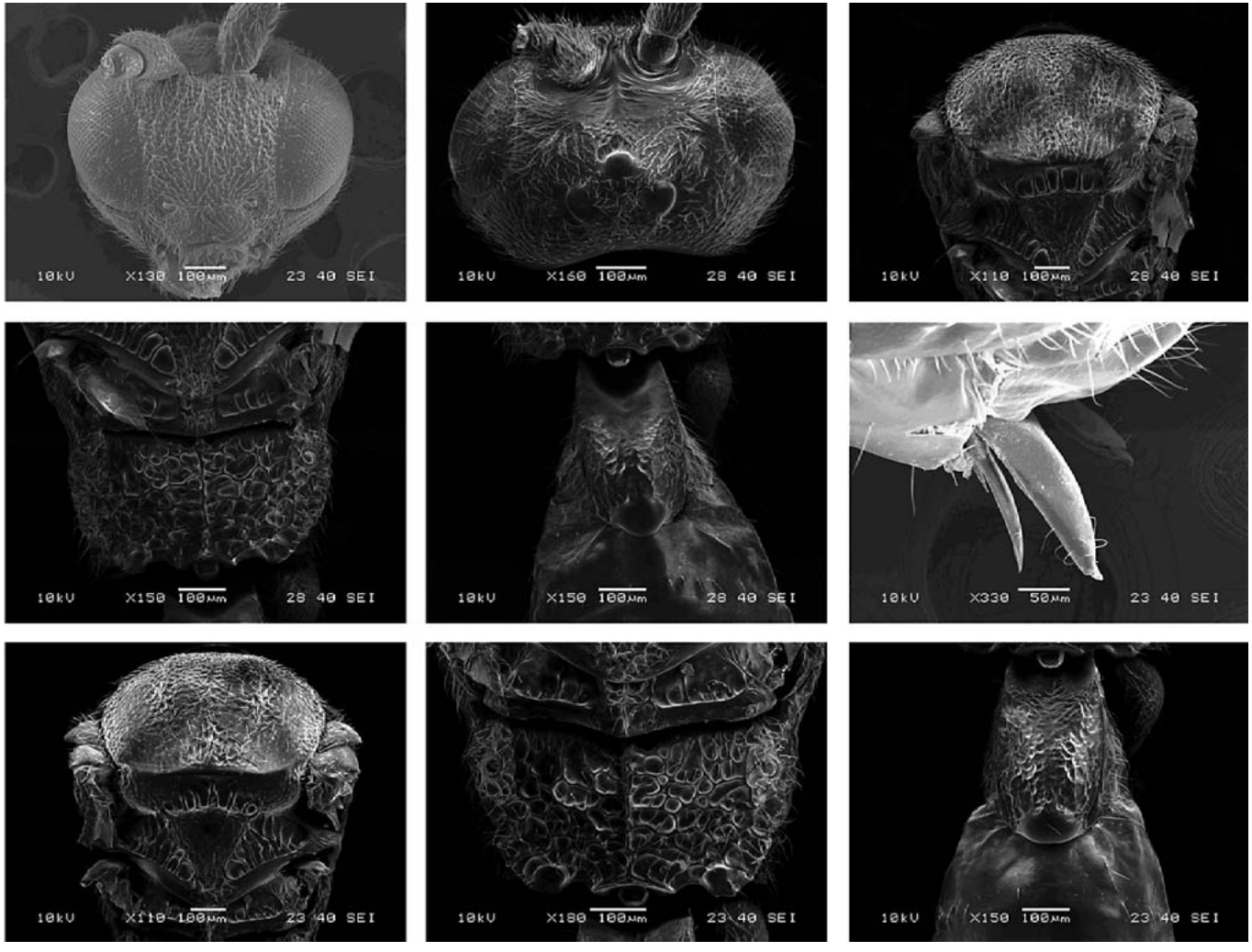

Fig. 1. *Microplitis basipallescentis*, **sp. nov**. Left above: head in front view (♀), middle above: head in dorsal view (♀), right above: mesoscutum and scutellum (♀), left middle: propodeum (♀), middle middle: basal tergites of metasoma (♀), right middle: apex of metasoma (showing ovipositor), left below: mesoscutum and scutellum (♂), middle below: propodeum (♂), right below: basal tergites of metasoma (♂).

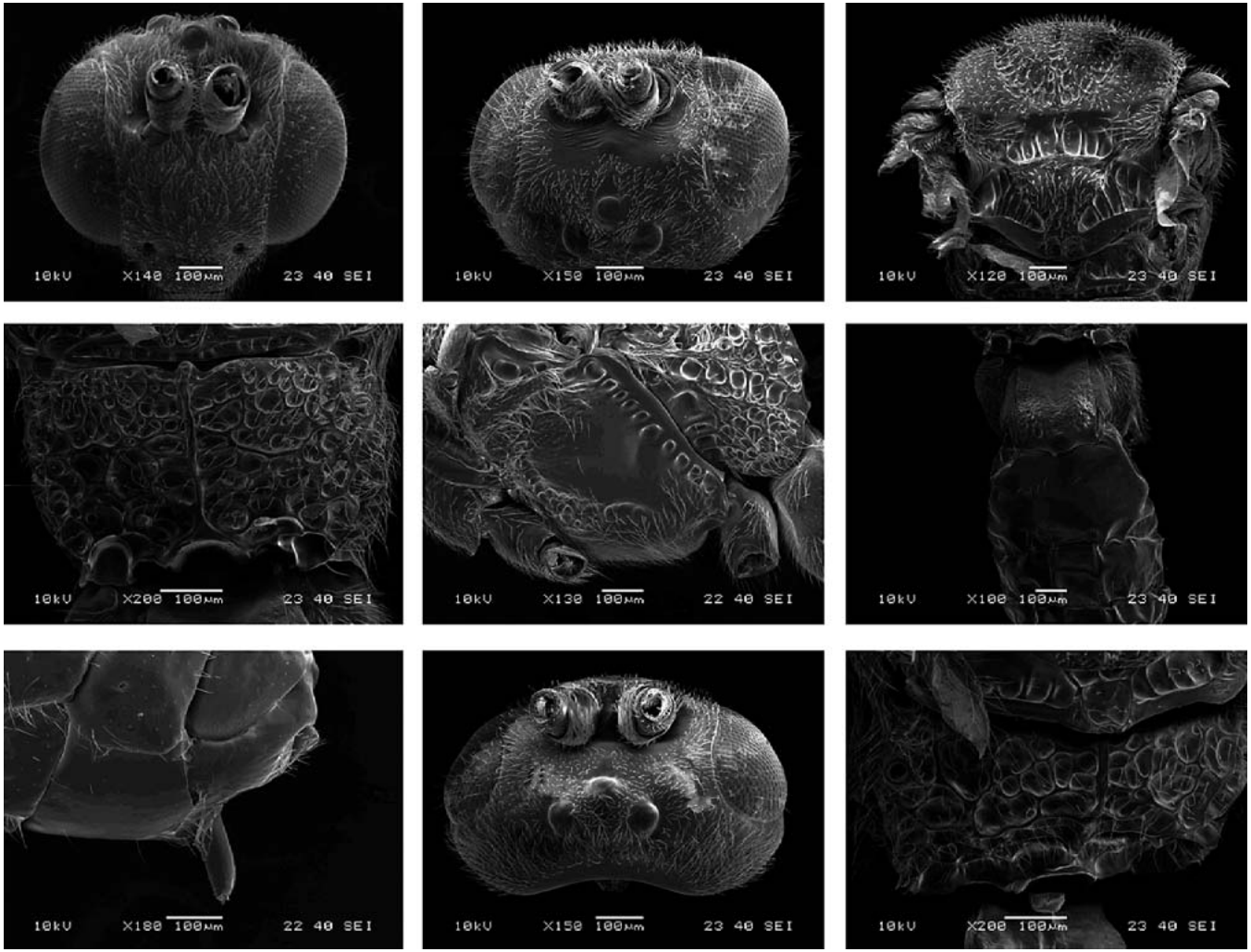

Fig. 2. *Microplitis brevispina*, **sp. nov.** Left above: head in front view (♀), middle above: head in dorsal view (♀), right above: mesoscutum and scutellum (♀), left middle: propodeum (♀), middle middle: mesosoma in side view (♀), right middle: basal tergites of metasoma (♀), left below: apex of metasoma (showing ovipositor), middle below: head in dorsal view (♂), right below: propodeum (♂).

hair, 1.1 × as wide as high; inner margins of eyes narrowest at mid-height. Antennae slightly longer than body (20: 19), densely hairy, F12-15 approximately 1.9-1.8 × as long as wide and loosely connected.

Mesosoma: width same as head, length: width: height = 10: 5.9: 5.8. Pronotum flat, weakly rugose-punctate with upper pronotal groove absent. Mesoscutum densely punctured, notauli wide and distinct, and meeting posteriorly to form a sunken area; median carina distinct; scutellar sulcus wide, deep, divided by 5 carinae; scutellum weakly punctate with dense hair, posteriorly band rugose-punctate medially. Propodeum coarsely reticulate-rugose with percurrent medial longitudinal carina developed an anterior transverse carina distinct.

Wings: 1-R1 1.5 × and 0.8 × as long as the distance from itself to apex of marginal cell and the length of stigma, respectively; stigma 2.5 × as long as wide; r approximately emerging from middle of stigma and about as long as 2-SR; 1-SR: 2-M = 0.9: 1.5; areolet large, nearly quadrangular; first discal cell 1.3 × as wide as high, 1-CU1: 2-CU1 = 1.1: 2. Hind wing with 2a-M: 2r-m = 2: 1; margin of vannal lobe convex and hairy.

Legs: hind coxae 2.8 x as long as wide, small and about as long as T1; both inner and outer spurs of hind tibiae of same length, 0.2 × as long as basitarsi.

Metasoma: slightly longer than mesosoma (11: 10). T1 parallel-sided, its length: basal width: apical width = 4: 2: 2, weakly rugose-punctured except for slightly depressed base and apical swelling smooth. T2 almost trapezoidal and 4.8 × as wide as long, its mid area slightly swollen, smooth. T3: T2 = 1.7: 1.1 in length, suture between T3 and T2 weak. T3 and the following tergites smooth, shiny with sparse hairs. Hypopygium small, slightly shorter than tip of metasoma; ovipositor sheath approximately as long as third hind tarsomere.

Color: black to dark reddish black. Antennae brown except for most of scape yellowish and outside scape yellowish and reddish brown; maxillary palp, labial palp and tibial spurs pale yellow; tegula reddish brown; Stigma and veins yellowish brown, semihyaline; wings brown over first discal cell and above areolet. Legs generally yellow, except all coxae yellowish and reddish brown, hind femora reddish brown, basal 1/6 and apical 2/5 of tibiae and tarsi grey brown. Metasoma approximately yellowish brown except for T1 dark yellowish brown, basal and lateral membrane pale yellowish brown.

Variation: anterior propodeal transverse carina indistinct. Body length 2.9-3.3 mm.

Male: vertex with dense punctation; antennae long and strong. Body length 2.9-3.1 mm.

Holotype: ♀, Guadun, Mt. Wuyi, Fujian, 23-Aug-1988, Shen Tianshun.

Paratype: 2♀♀, same as holotype; 1♀, Guadun, Mt. Wuyi, Fujian, 13-Aug-1988, Chen Jianwen; 3♀♀, Longdu, Mt. Wuyi, Fujian, 8-Sep-1993, Zhang Feiping; 1♀, Daanyuan, Mt. Wuyi, Fujian, 4-Sep-1988, Ge Jianhua; 1♀, Daanyuan, Mt. Wuyi, Fujian, 27-Aug-1993, Zhang Feiping; 1♀, Daanyuan, Mt. Wuyi, Fujian, 27-Aug-1993, Chen Yao; 4♀♀, Jicun, Ninghua, Fujian, 23-Jul-1990, Hong Shengxiang; 1♀, Jicun, Ninghua, Fujian, 23-Jul-1990, Huang Rixin; 4♀♀, Erliping, Fujian, 23-Aug-1993, Chen Yao; 1♀, Shuixi, Ninghua, Fujian, 9-Jul-1990, Yang Jianquan; 1♀, Guading, Chongan, Fujian, 13-Aug-1988, Chen Jianwen; 1♀, Buyun, Shanghang, Fujian, 28-Sep-1988, Chen Jianwen; 1♀, Guhuangkeng, Mt. Wuyi, Fujian, 25-Aug-1993, Zhang Feiping; 4♀♀, Sangang, Mt. Wuyi, Fujian, 22, 27-Aug-1988, Chen Jianwen; 3♀♀, Sangang, Mt. Wuyi, Fujian, 6-Sep-1988, Ge Jianhua; 1♀, Sangang, Mt. Wuyi, Fujian, 6-Sep-1988, Yang Jianquan; 2♂♂, Guadun, Mt. Wuyi, Fujian, 23-Aug-1988, Shen Tianshun; 1♂, Guadun, Mt. Wuyi, Fujian, 13-Aug-1988, Chen Jianwen; 1♂, Daanyuan, Mt. Wuyi, Fujian, 27-Aug-1994, Zhang Feiping; 1♂, Daanyuan, Mt. Wuyi, Fujian, 27-Aug-1988, Chen Yao; 2♂♂, Daanyuan, Mt. Wuyi, Fujian, 4-Sep-1988, Ge Jianhua; 2♂♂, Tianyuan, Qingliu, Fujian, 4-Jul-1990, Yang Jianquan; 2♂♂, Tianyuan, Qingliu, Fujian, 15-Jul-1990, Wang Chenhui; 1♂, Guading, Chongan, Fujian, 13-Aug-1988, Chen Jianwen; 2♂♂, Erliping, Fujian, 23-Aug-1993, Chen Yao; 1♂, Buyun, Shanghang, Fujian, 29-Sep-1988, Chen Jianwen; 1♂, Jicun, Ninghua, Fujian, 23-Jul-1990, Hong Shengxiang; 2♂♂, Sangang, Mt. Wuyi, Fujian, 22-Aug-1988, Chen Jianwen; 2♂♂, Sangang, Mt. Wuyi, Fujian, 6-Sep-1988, Ge Jianhua.

Distribution: Fujian province, China.

Biology: unknown.

Etymology: named after short spurs (hind tibiae with outer and inner spurs short).

Notes: the new species resembles *Microplitis menciana* Xu and He, but the former hasT2 smooth or at most uneven and the latter hasT2 rugose or at least appearing shriveled medially.

Microplitis carinata, **sp. nov.** (Fig. 3)

Holotype: ♀, body length 2.9 mm, forewing length 3 mm.

Head: 1.9 × as wide as long in dorsal view. Vertex finely and sparsely punctulate; upper temple densely punctate; ocelli large, forming a high triangle, imaginary tangent of posterior margin of median ocellus distant from posterior ocelli, OD: OOL: POL = 0.5: 0.8: 1.1. Face transverse, 1.2 × as wide as high, inner margins of eyes nearly parallel-sided, with dense hair; face flat and densely punctured. Antennae longer than body (20: 16), F12-15 approximately 2-1.9 × as long as wide and loosely connected.

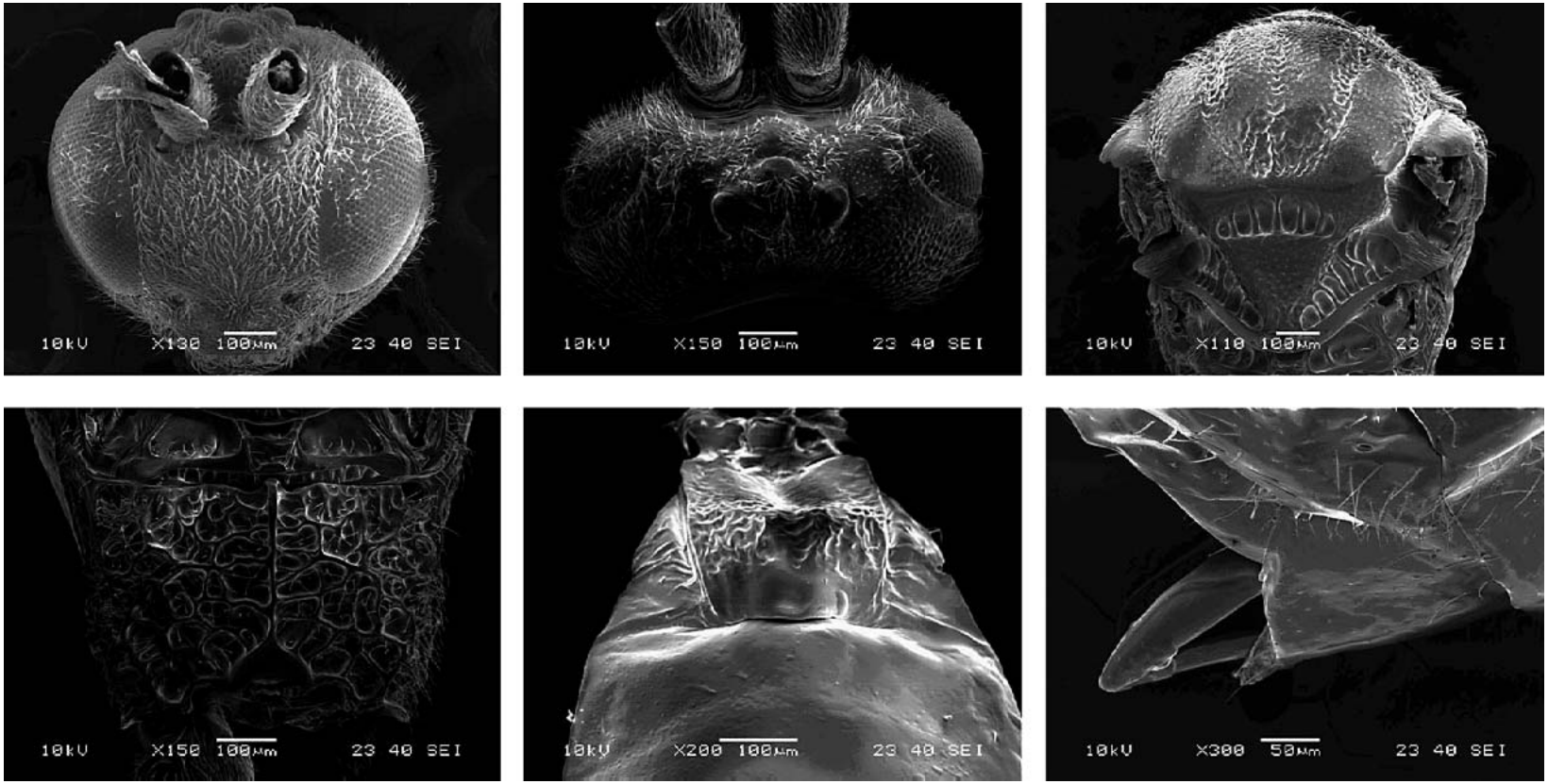

Fig. 3. *Microplitis carinata*, **sp. nov**. (♀). Left above: head in front view, middle above: head in dorsal view, right above: mesoscutum and scutellum, left below: propodeum, middle below: basal tergites of metasoma, right below: apex of metasoma (showing ovipositor).

Mesosoma: a bit wider than head (7: 6.5), its length: width: height = 9.8: 7: 7.3. Pronotum flat, punctate with upper pronotal groove absent. Mesoscutum densely hairy, unevenly punctured; notauli slightly depressed, densely punctate along the course of the notauli meeting posteriorly to form a slightly sunken rugose area, middle suture shallow; scutellar sulcus broad, deep, divided by 6 carinae; scutellum with micropunctures, apical polished band medially interrupted by rugosity. Propodeum coarsely reticulate-rugose with narrow, distinct percurrent medial longitudinal carina and anterior transverse carina.

Wings: 1-R1 1.8 × and 0.9 × as long as distance from its apex to apex of marginal cell and the length of stigma, respectively; r obliquely emerging from stigma in middle and about as long as 2-SR; areolet large, approximately quadrangular; first discal cell 1.3 x as wide as high, 1-CU1: 2-CU1 = 1.1: 2.1. Hind wing with 2a-M: 2r-m = 2.3: 1.4; margin of vannal lobe convex and hairy.

Legs: hind coxae small, approximately as long as T1; both inner and outer spurs of hind tibiae approximately equal, 0.3 × as long as basitarsi. All telotarsi slightly thickened.

Metasoma: longer than mesosoma (12: 9.8). T1 subparallel-sided, its length: basal width: apical width = 3.2: 1.9: 1.9, apical 2/5 elate and slightly widening towards apex, finely rugose-punctate except for slightly depressed base and apical swelling smooth. T2 nearly rectangular with its apical width: central length = 4: 1, suture between T2 and T3 reduced to nearly indistinct depression; T3 about 2.1 x as long as T2, smooth, shiny with sparse hairs in apical 2/5. Hypopygium small, slightly shorter than tip of metasoma; ovipositor sheath approximately as long as second hind tarsus; ovipositor acute.

Color: black. Antennae yellowish-brown except for scape reddish brown in front; maxillary palp, labial palp, tibial spurs and tegula pale yellowish brown. Stigma and veins yellowish brown; wings with darker areas over first discal cell and above areolet. Legs yellowish brown to yellow except for all coxae dark reddish yellow, hind femora dark at apex, hind tibiae whitish yellow in basal 2/5. T1 dark reddish brown, its lateral membrane unevenly whitish yellowish brown, rest of metasoma reddish brown.

Variation: color of metasoma dark brown; mostly scape yellowish brown.

Male: without brown area over first discal cell and above areolet.

Holotype: ♀, Tianmenya, Shennongjia, Hubei, 17-Aug-1988, Zhang Liqin.

Paratype: 1♀, Tianmenya, Shennongjia, Hubei, 24-Aug-2000, Yang Jianquan; 1♀, Yangriwan, Shennongjia, Hubei, 28-Jul-1988, Huang Juchang; 1♀, Tianmenya, Shennongjia, Hubei, 17-Aug-1988, Zhang Liqin; 1♂, Yangriwan, Shennongjia, Hubei, 28-Jul-1988, Huang Juchang.

Distribution: Hubei province, China.

Biology: unknown.

Etymology: the specific name refers to propodeum with basal transverse carina distinct.

Notes: the new species comes near *Micoplitis helicoverpae* Xu and He, but the former has the propodeum with basal transverse carina distinct and the latter has the propodeum with basal transverse carina indistinct or absent.

Microplitis changbaishana, **sp. nov.** (Fig. 4)

Holotype: ♀, body length 2.9 mm, forewing length 2.9 mm.

Head: 2 × as wide as long in dorsal view. Vertex and upper temple sparsely and weakly punctured; ocelli forming a high triangle, imaginary tangent of posterior margin of median ocellus distant from posterior ocelli, OD: OOL: POL = 0.5: 0.9: 0.9. Face approximately rectangular with dense hair, 1.2 × as wide as high, inner margins of eyes nearly parallel-sided. Antennae longer than body (20: 17), each flagellum with a false division, so, they look like 2 segments, F12-15 approximately 2.1-1.9 × as long as wide and tightly connected.

Mesosoma: a bit narrower than head (5.2: 5.8), its length: width: height = 9.1: 5.8: 6.2. Pronotum weakly rugose-punctate with upper pronotal groove absent. Mesoscutum unevenly and densely punctured, notauli with more dense rugose-punctures and meeting posteriorly to form a slightly sunken rugose area; median suture indistinct; scutellar sulcus wide, deep, divided by 5 carinae; scutellum weakly rugose punctured, posteriorly band rugose-punctate medially, lunules narrow and small. Propodeum coarsely reticulate-rugose with percurrent medial longitudinal carina developed.

Wings: 1-R1 2 × and 1 × as long as the distance from itself to apex of marginal cell and the length of stigma, respectively; r approximately emerging from middle of stigma and about as long as 2-SR; 1-SR incurvate, shorter than 2-M (0.7: 1.3); areolet large, approximately quadrangular; first discal cell 1.4 × as wide as high, 1-CU1: 2-CU1 = 1: 1.9. Hind wing with 2a-M: 2r-m = 2.1: 0.7; margin of vannal lobe convex and hairy.

Legs: hind coxae small, approximately as long as T1; both inner and outer spurs of hind tibiae are the same length, 0.3 x as long as basitarsi.

Metasoma: stout, longer than mesosoma (11: 9.1). T1 subparallel-sided, slightly widened towards apex, its length: basal width: apical width = 3.1: 1.7: 2.1, weakly rugose-punctured except for slightly depressed base and small apical swelling smooth. T2 nearly trapezoidal, smooth, with its apical width: central length = 4: 1; T3: T2 = 1.8: 1, suture between T3 and T2 reduced to weak depression, T3 and the following tergites smooth, shiny with sparse hairs. Hypopygium small,

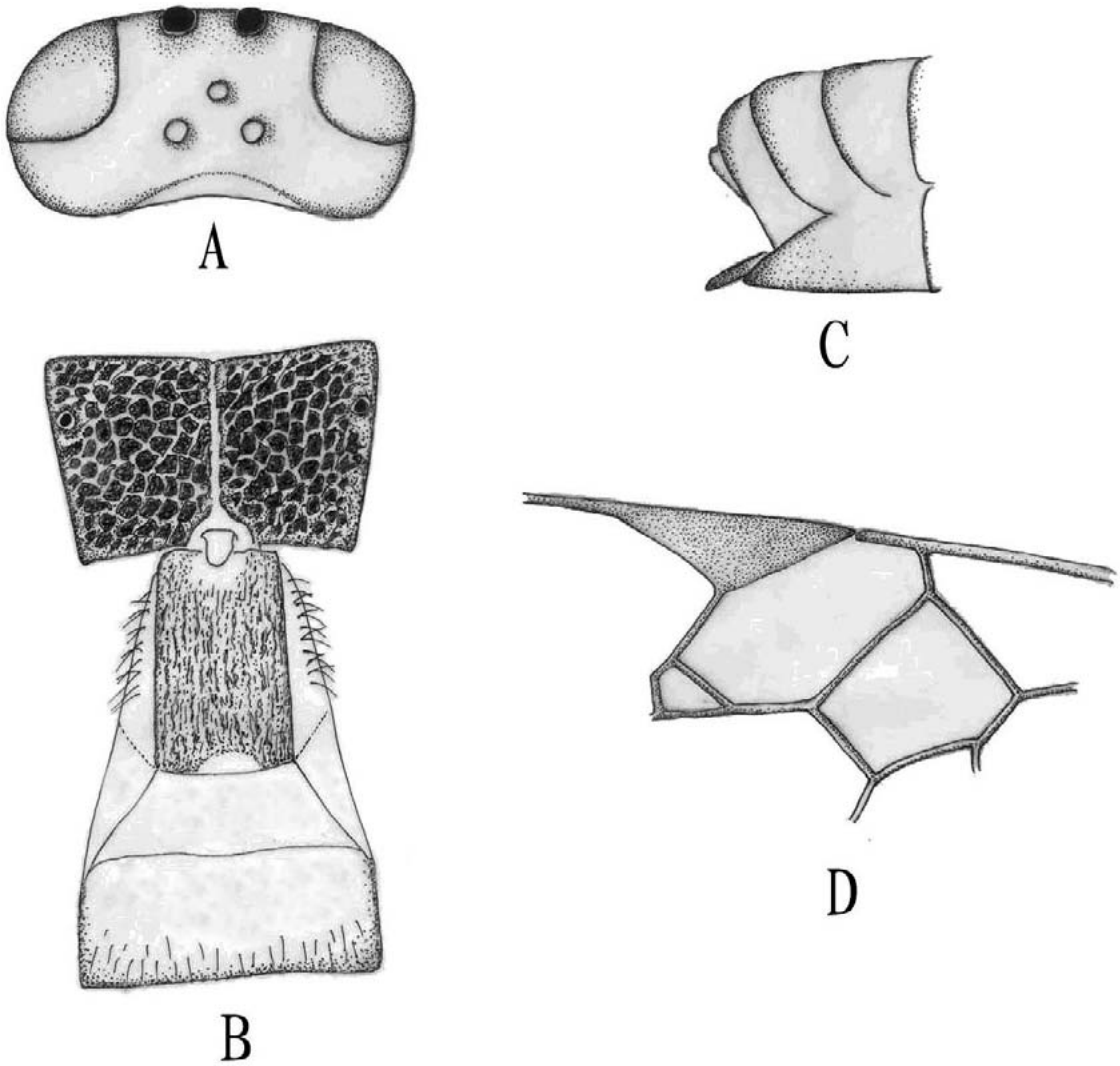

Fig. 4. *Microplitis changbaishana*, **sp. nov.** (♀). A. head in dorsal view, B. propodeum and basal tergites of metasoma, C. apex of metasoma (showing ovipositor), D. forewing (part).

slightly shorter than tip of metasoma; ovipositor sheath approximately as long as second hind tarsomere.

Color: black to reddish black. Antennae brown except scape bright yellow; maxillary palp, labial palp, tibial spurs and most hind tibiae whitish yellow; stigma yellowish brown; veins brown except basal part pale yellow; wings colorless except brown areas over first discal cell and above areolet. Legs generally yellow except thind coxae, hind tibiae apical 1/3 and tarsi yellowish brown, rest of hind tibiae pale yellow. T1 dark reddish brown, rest of tergites reddish brown, lateral metasoma bright yellow to yellowish brown from base to tip.

Variation: hind coxae reddish brown.

Male: Not seen.

Holotype: ♀, Jian, Mt. Changbaishan, Jilin, 6-Aug-1989, Yang Jianquan.

Paratype: 1♀, same as holotype.

Distribution: Jilin province, China.

Biology: unknown.

Etymology: the specific name is derived from "Changbaishan", the collection place.

Notes: The new species resembles *Microplitis pronotauli*, but has the following differences: the former has basal transverse carina of propodeum distinct; color black-brown along the course of notauli to scutellar sulcus. The latter has basal transverse carina of propodeum indistinct or absent; reddish yellow along the course of notauli to scutellar sulcus.

Microplitis crassiantenna, **sp. nov.** (Fig. 5)

Holotype: ♀, body length 3.3 mm, forewing length 4 mm.

Head: 2 × as wide as long in dorsal view. Vertex and upper temple densely punctured; ocelli large, forming a high triangle, imaginary tangent of posterior margin of median ocellus distant from posterior ocelli, OD: OOL: POL = 0.6: 1: 1.2. Face transverse with dense hair, 1.3 × as wide as high, inner margins of eyes early parallel-sided. Antennae thick, longer than body (20: 17.5), each flagellum with a false division, so, they look like 2 segments, F12-15 approximately 1.9-1.5 × as long as wide and tightly connected.

Mesosoma: about the same width as head (7.2: 7.3), its length: width: height = 11.8: 7.2: 8.6. Pronotum flat, sparsely and weakly rugose-punctate with upper pronotal groove absent. Mesoscutum densely micropunctured except for coarsely rugose-punctures along the course of the notauli and meeting posteriorly to form a slightly sunken rugose area; median suture short, only posterior part present; scutellar sulcus wide, deep, divided by 5 carinae; scutellum densely rugose micropunctured, posteriorly band rugose-punctate medially, lunules extremely narrow. Propodeum coarsely reticulate-rugose with percurrent medial longitudinal carina narrow, high and strongly developed.

Wings: 1-R1 1.5 × and 0.9 × as long as the distance from itself to apex of marginal cell and the length of stigma, respectively; r approximately emerging from a little outside of stigma and slightly shorter than 2-SR (1.3: 1.5); 1-SR slightly incurvate, shorter than 2-M (0.9: 1.3); areolet large, approximately quadrangular; first discal cell 1.3 x as wide as high, 1-CU1: 2-CU1 = 1.3: 2.3. Hind wing with 2a-M: 2r-m = 2.4: 1.1; margin of vannal lobe convex and hairy.

Legs: hind coxae small, slightly longer than T1 with dense hair; both inner and outer spurs of hind tibiae of same length, 0.3 × as long as basitarsi.

Metasoma: longer than mesosoma (13.2: 11.8). T1 widening from base to apex, its length: basal width: apical width = 3.9: 1.9: 2.6, rugose-punctured except for moderately depressed base and small apical swelling smooth. T2 nearly rectangular, smooth, with its apical width: central length = 5.7: 1.3, its mid-center area slightly elevated; T3 longer than T2 (2.5: 1.3), suture between T3 and T2 reduced to weak depression, T3 and the follow-

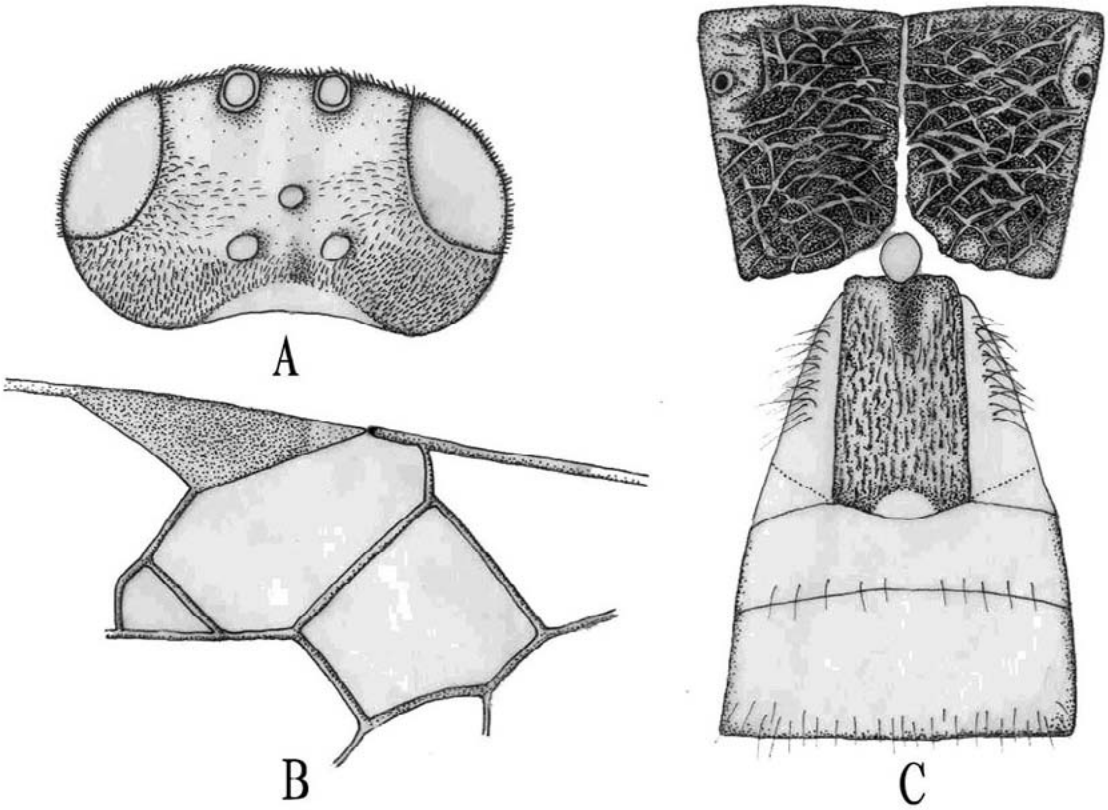

Fig. 5. *Microplitis crassiantenna*, **sp. nov**. (♀). A. head in dorsal view, B. forewing (part), C. propodeum and basal tergites of metasoma

ing tergites smooth, shiny with sparse hairs. Hypopygium small, slightly shorter than tip of metasoma, with its tip truncate; ovipositor sheath short, approximately as long as second hind tarsomere.

Color: black. Antennae dark brown except scape black to reddish black; maxillary palp, labial palp and tibial spurs pale yellow, tegula yellow; Stigma yellowish brown with semihyaline basal patch; veins brown, hyaline except 1-R1 brown, C+SC+R, M+CU1, 1A+2A whitish yellow; wings unevenly brown, hyaline with brown areas over first discal cell and above areolet. Legs yellow except all coxae blackish-reddish-brown, tip of hind femora, tip of tibiae and tarsi reddish brown. T1, T2 dark reddish brown, rest of tergites generally reddish brown.

Variation: most of metasoma dark reddish brown.

Male: Not seen.

Holotype: ♀, Donggang, Mt. Changbaishan, Jilin, 24-Jul-1989.

Paratype: 1♀, Donggang, Mt. Changbaishan, Jilin, 25-Jul-1989, Zhou Xiaohua.

Distribution: Jilin province, China.

Biology: unknown.

Etymology: refers to thick flagellomeres.

Notes: the new species resembles *Microplitis tadzhica* Telenga, but has the following differences: the former has flagellomeres thick and dark brown; 1-R1 1.5 × as long as the distance from its apex to apex of marginal cell. Body stout. The latter has flagellomeres thin and reddish yellow; 1-R1 2 × as long as the distance from itself to apex of marginal cell.

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