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TWO NEW SPECIES OF THE GENUS *APANTELES* FOERSTER S. STR. FROM CHINA (HYMENOPTERA: BRACONIDAE: MICROGASTRINAE)

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ABSTRACT

Two new species of the genus *Apanteles* Foerster s.str. (Hymenoptera: Braconidae: Microgastrinae), *Apanteles quinquecarinis* and *Apanteles zhangi* from China are described and fully illustrated. All the type specimens are deposited in the Beneficial Insects Lab, College of Plant Protection, Fujian Agriculture & Forestry University, Fuzhou, China

Key words: Hymenoptera, Braconidae, Microgastrinae, *Apanteles*, new species, China.

ABSTRAK

Dua spesies baru dari genus *Apanteles* Foerster s. str. (Hymenoptera: Braconidae: Microgastrinae), *Apanteles*

quinquecarinis dan *Apanteles zhangi* dari China, diperihal dan diilustrasikan. Kesemua spesimen tip ditempatkan di Beneficial Insects Lab, College of Plant Protection, Fujian Agriculture & Forestry University, Fuzhou, China.

Key words: Hymenoptera, Braconidae, Microgastrinae, *Apanteles*, spesies baru, China.

INTRODUCTION

Apanteles Foerster s.str. is a large microgastrine genus and contain 26 species in China including Taiwan (Chou Liangyih 1979; You Laoshao et al., 1982; Song Dongbao et al., 2001). The genus mostly comprises the *A. ater* species-group (sensu Nixon 1965) as well as a few smaller groups, of which the *A. grandiculus* group, the *A. metacarpalis* group and the *A. taeniaticornis* group (see Mason 1981) occur in China.The limits of the genus are reasonably clear, with most species having the ovipositor sheaths longer than the half length of the hind tibia and hairless throughout, a complete or near complete propodeal areola, margin of vannal lobe concave and hairless,the posterior scutum having aciculate sculpturing and T1 parallel–sided to narrowing posteriorly. Some species of this genus come close to the condition in *Dolichogenidea*,but can usually be correctly placed in *Apanteles* s.str. on the shape of T1 and sculpturing of the scutum.

TAXONOMY

Key to both spp. nov., *Apanteles quinquecarinis* and *Apanteles zhangi*

1. Stigma brown and hyaline; scutellum with densely heavy punctures; Scutellar sulcus deep with 5 cristulae .....*Apanteles quinquecarinis* sp. nov.

1' Stigma pale yellow; scutellum having weak punctures; scutellar sulcus shallow and wide with 8-9 cristulae.....*Apanteles zhangi* sp. nov

Apanteles quinquecarinis n. sp. (Figs. 1)

Female. Head. In dorsal view, width of head 2.1 times as long as its length. Antennal scrobe smooth with the margin between its excavation and eyes having rugulae; temple superficially punctate; vertex weakly regulate. Ocelli large, high triangular, and with the hind tangent of the median ocellus located in front of lateral ocellus, OOL/OD = 0.9/0.5. Face densely covered with large punctures (the punctures of the clypeus slightly weaker than that of the face) with the median-longitudinal on the upper 1/3 sect; the width of the face 1.2 times as long as its height; eyes markedly convergent below. Antennae 1.3 times as long as length of body, with evenly covering short pubescence, scape with length: the width = 1.1:0.8 and its flagellomeres tapered with the length of its 12-15th segments 1.7-1.6 times as long as its width and its intersegment having a petiole.

Mesosoma. Subequal to the width of the head (6:6.3.0), and its length: width: thickness = 10:6:8.3. Mesoscutum rather heavily punctate and a dull, more coarsely punctate zone at the posterior end of the notaulic course in which there are longitudinal elements mixed with reticulate-rugose punctatae. Scutellar sulcus deep, with its centre portion wide and its sides narrow, having 5 cristulae and 6 orifices with the median 2 orifices large; disc of scutellum uplifted, having densely heavy punctures and in profile with a short, truncate posterior face. Propodeum densely irregular, short crest and strongly rugae; keels bounding the areola, the costula and its forks particularly sharp.

Wings. N.st. about 6.1 and 1.4 times as long as the distance from the apex of the radial cell and the width of the stigma respectively, and the length of the stigma 2.8 times its width; r_1 projecting from the median and somewhat outside of the stigma, obliquely outside, and about 2 times as long as $cuqu_1$, and forming a even arc at their junction; the length: the width of the discal cell = 4:3,$d_1 < d_2$.The length of the cubitellan 1.2 times its height; nervellus strongly incurved; the edge of the

vannal lobe beyond its widest part concave, and the concave edge being completely free from projecting hairs.

Legs. Hind coxa strong, reaching apex of the 4th segment of the metasoma, and with its outside weakly punctured and rugose-punctate; the length of the hind femur about 3 times as long as its width; outside of the hind tibia with sparse spines, and with its inner and outer spurs extending to 2.4/5 and 1.2/5 of the hind basitarsus respectively; tarsus 4 nearly equalling to tarsus 5, and tarsal claw normal (not strong).

Metasoma. Slightly shorter than mesosoma (8.6:10). Tergite 1 with both sides subparallel (somewhat narrow before the hump and somewhat wide after the hump), its apex slightly constricted, its base hollowed and smooth, the length of its horizontal surface 1.2 times as long as the width across the hump and its longitudinal furrow long and deep with the base just passing the hump and the apex reaching distal-median smooth convex. Median field of tergite (2 + 3) with its width 3.3 times its length. The length of tergite 3 2.1 times as long as that of median field of tergite (2 + 3) , and the following tergites smooth. Ovipositor sheath 1 equal in length to the hind tibia, and widened apically with a petiole at its base and oblique cutting at its apex; ovipositor large and straight with its length equal to that of the hind tibia; hypopygium long, acute and longitudinal rugose.

Color. Black. Antenna blackish brown; stigma brown and hyaline; wings glassy with n. st. pitchy, n. cost.,n. med. n.bas. and $cuqu_1$ whitish yellow, and the rest of the veins yellowish-brown. Legs (except for fore and mid coxae dark reddish-brown; hind coxa black; apical half of the hind femur, apical 2/5 of the hind tibia and apical 2/5 of the hind basitarsus pitchy;the 2,3and 4th segments of the hind tarsi lightly infuscated; the rest of the hind legs yellowish-red brown), metasoma (except for tergite black, tergite 4 and the following tergites dark brown) dark-yellow and yellow. Ovipositor sheath black (apex pale); ovipositor yellowish-and reddish-brown

Measurement**.** Length of body 2.8 mm, of forewings 3.3 mm.

Biology. Unknown.

Distribution. China (Jiangxi Province).

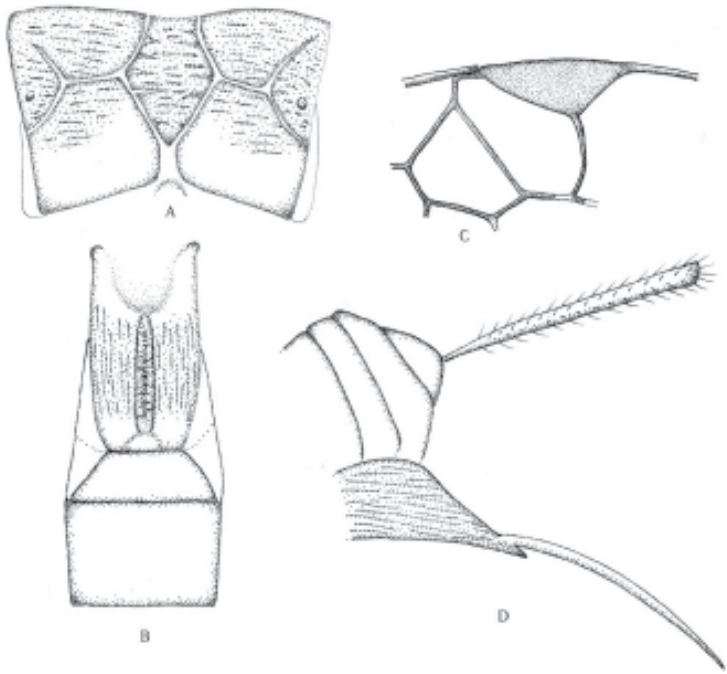
Male. Unknown.

HOLOTYPE. Female. CHINA: Zixi, Jiangxi Prov. of China, 4.vii.1998.Yang Jianquan.

ETYMOLOGY. The specific name refers to five cristulae in scutellar sulcus.

REMARKS. Morphologically *Apanteles quinquecarinis* n. sp. and *Apanteles nycon* Nixon are closely similar (Shenefelt, 1972:583; Nixon, 1965:53), the main points of distinction between them are to be found in the following:

Apanteles quinquecarinis n. sp.	*Apanteles nycon* Nixon
1. Keels enclosing the areola of the propodeum strong;	1. Keels enclosing the areola of the propodeum weak;
2. the punctures of the face rough;	2. the punctures of the face superficial;
3. the basal half of the hind femur reddish-and yellowish-brown.	3. the hind femur entirely darkly infuscated.

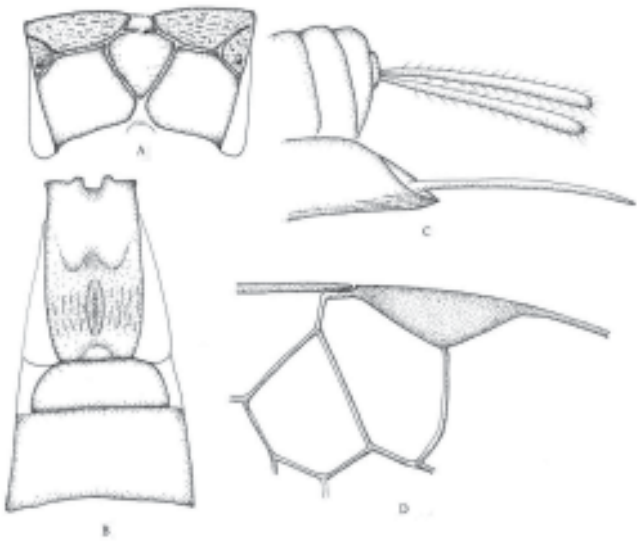


Figs. 1. *Apanteles quinquecarinis* n. sp.. A, propodeum; B, tergite 1-3; C, partial forewing; D, apex of metasoma to show female genitalia (lateral view)

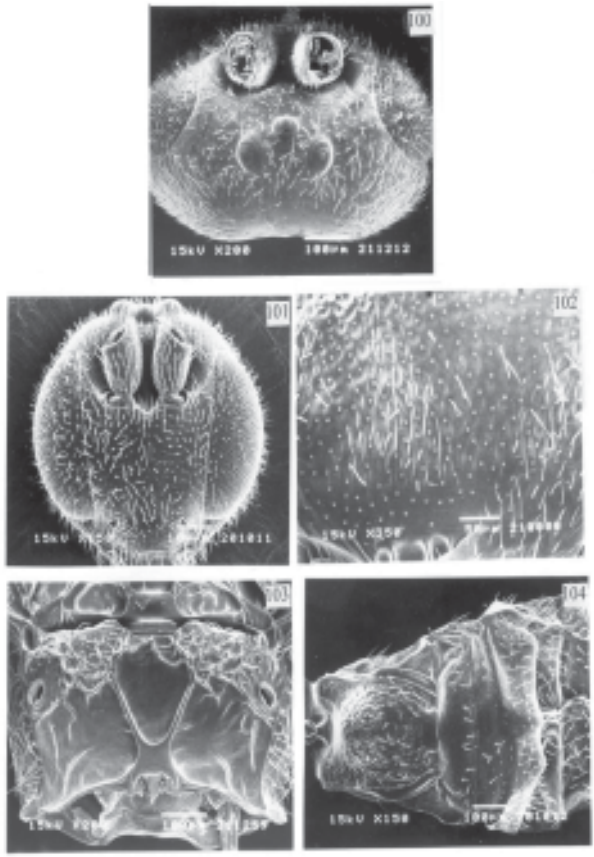
Apanteles zhangi n. sp.
(Figs. 2, 3)

Head. In dorsal view, width of head 2.0 times as long as its length. Antennal scrobe far departing from eyes; vertex with sparsely fine punctures; the hind tangent of the median just located in front of the lateral ocellus, OOL/OD = 7.0/5.5. Face with sparsely weak punctures with the median-longitudinal crest only being a dot at the upper 2/5; the width of the face 1.2 times its height. Antennae slightly longer than body (10:9.1) with the length of scape about 1.4 times its width, and its flagellomeres tapered from the base to the apex with the length of its 12-15th segments 1.5-1.3 times its width and its intersegment closely contacted. Antennae slightly longer than body (10:9.1) with the

length of its scape about 1.4 times its width, and its flagellomeres tapered from the base to the apex with the length of its 12-15th segments 1.5-1.3 times its width and its intersegment closely contacted.



Figs. 2. *Apanteles zhangi* n. sp.. A, propodeum; B, tergite 1-3; C, apex of metasoma to show female genitalia (lateral view); D, partial forewing



Figs. 3. *Apanteles zhangi* n. sp..(SEM photos).100, dorsal view of head; 101, frontal view of head, 102. partial mesoscutum; 103, propodeum; 104, tergite 1-3

Mesosoma. Nearly equalling to the width of the head (5.5:5.3), and with its length: width:thickness = 8.9:5.5:6.1. Mesoscutum unevenly punctured, and along the imaginary course of the notauli the punctures closing and becoming stripunctate and then longitudinal elements gradually widen toward the end; scutellar sulcus shallow and wide with 8-9 cristulae; scutellum with having weak punctures and white long hair. Propodeum with three fields completing and having rugulae.

Wings. N.st. 6.3 and 1.3 times as long as its distance from the apex of the radial cell and the width of the stigma respectively; r_1 projecting from the median of the stigma, vertical to it, and longer than $cuqu_1$ (2:1). The edge of the vannal lobe beyond its widest part concave, and the concave edge being completely free from projecting hairs.

Legs. Hind coxa with its outside sparsely covered with weak punctures; the length of the hind femur about 3 times its width; outside of the hind tibia sparsely spined, and with its inner and outer spurs extending to 2.7/5 and 1.0/5 of the hind basitarsus respectively; tarsus 4 nearly equalling to tarsus 5.

Metasoma. Equalling to mesosoma (5.1:5.0). Tergite 1 with basal 3/4 subparallel (slightly narrow at base), basal half smooth, apical half rugae, apical 1/4 circular constricted toward apex, the length of its horizontal surface 1.2 times as long as the width across the hump and its distal-median partial smooth. Median field of tergite (2 + 3) nearly transverse oblong with its width 2.5 times its length. Tergite 3 and the following tergites smooth with its surface sparsely hair. Ovipositor sheath slightly longer than hind tibia (5.3:5.0).

Color. Black. Antenna brown; n.st. and around the stigma slightly yellow; stigma, n.cost., r_1, $cuqu_1$, pigmented part of cu_3 and d_1 pale yellow, and the rest of the veins and the surface of the wings colorless and hyaline. Fore leg yellow with coxa reddish brown; mid leg variegated yellow with coxa, trochanter and the basal half of the femur reddish- yellow; hind leg infuscate with coxa blackish-brown, femur reddish brown, the basal half of the tibia and the basal 2/5 of the basitarsus yellow.

Variation. Stigma with a broad margin brown; the length of the body 2.5-2.8 mm.

Measurement. Length of body 2.5 mm, of forewings 3.2 mm.

Biology. Unknown.

Distribution: China (Fujian Province).

Male. Unknown.

HOLOTYPE. Female, Sangang, Mt.Wuyi, Zixi, Fujian Province, 9.viii. 1988. Zhang Xiaobin.

PARATYPES. Sangang, Mt. Wuyi, Zixi, Fujian Province, 5. ix. 1988, Ge Jianhua; 1 female; Guadon, Mt Wuyi, Fujian Province, 20. viii. 1988, Shen Tianshun; 1 female; Qingliu, Fujian Province, 19.vii. 1990,Yang Jianquan.

ETYMOLOGY. Name this species after Zhang Xiaobin in appreciation of his collecting.

REMARKS. *Apanteles zhangi,* n. sp. is similar in appearance to *Apanteles taragamae* Viereck from which it is easily distinguished by following features (Shenefelt,1972: 648; Nixon, 1965:66):

Apanteles zhangi n. sp.	*Apanteles taragamae* Viereck
1. Stigma pale yellow and hyaline with a brown margin;	1. Stigma evenly pale yellow without a broad brown margin;
2. flagellomeres gradually thin from base to apex with its 12-15th segments closely articulated;	2. flagellomeres evenly structured with its 12- 15th having petiole between them and loosening articulated;
3. median field of tergite (2 + 3) with its width 2.5 times its length.	3. median field of tergite (2 + 3) with its width 4.5 times its length.

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