

THE FIRST RECORD OF THE GENUS ANTHIDIELLUM COCKERELL 1904 FROM CHINA WITH DESCRIPTIONS OF THREE NEW SPECIES (APOIDEA, MEGACHILIDAE, ANTHIDIINI)

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Abstract The genus *Anthidiellum* Cockerell is newly recorded in China and three new species of *Anthidiellum* (*s. str.*) are described and illustrated: *Anthididlum* (*s. str.*) *borealis* sp. nov., *Anthidiellum* (*s. str.*) *scutellatum* sp. nov., *Anthidiellum* (*s. str.*) *xinjiangensis* sp. nov. A key to 3 new species is given. All the type specimens are deposited in the Institute of Zoology, Chinese Academy of Sciences.

Key words Apoidea, Megachilidae, Anthidiini, Anthidiellum, new species, China.

Anthidiellum Cockerell, 1904

Anthididlum Cockerell, 1904. Bulletin of the Southern California Academy of Sciences 3: 3. Type species: *Trachusa strigata* Panzer, 1805. By original designation.

Below 10 mm; body yellow with black marks; clypeus overhanging above the base of labrum; subantennal suture obviously curved; preoccipit carinated; pronotum lobe lamella form; mesopleuron with a strong ocellular carina; scutellum is carinate or lamellate extending above metascutum and propodeum, with median emargination; margin of the fovea which behind the propodeal spiracle carinated; hind tibiae flattened; without arolia; apex of the gonostylus of the male swollen, truncate, bilobed.

Anthidiellum Cockerell, 1904 is a small genus in Anthidiini. Distributed in the North Hemisphere. There are 6 subgenera: *Anthidiellum s. str.*, *Ananthidiellum*, *Chloranthidiellum*, *Clypanthidium*, *Pyranthidium*, *Ranthidiellum* (Michener, 2000), except *Anthidiellum s. str.* distribute in Europe, mediterranean, Central Asia, India, North and central America; others genera distribute in South East Asia and Africa. About 40 species in the world.

Anthidiellum (*Anthidiellum*) Cockerell, s. str. 1904

Anthidium (*Anthidiellum*) Cockerell, 1904. Bulletin of the Southern California Academy of Sciences, 3 3. Type species: *Trachusa strigata* Panzer, 1805. By original designation.

Anthidium (*Carianthidium*) Friese, 1923. Die Europäischen Bienen, p. 304. Type species: *Trachusa strigata* Panzer, 1905. By original designation.

5-7 mm; metasoma flattened, lateral margin lamella form; sternites of male without small black

comb.

Key to Chinese species

Females

- 1 (4) Mandible black
- 2 (3) Clypeus black, paraocular area with transverse yellow maculation; 6-7 mm *A. (s. str.) borealis* sp. nov.
- 3 (2) Apical 1/3 of clypeus black; 1st flagellum 1.5 times longer than 2nd; 2nd segment equal in width and length; width of 3rd 4th 2 times as length *A. (s. str.) scutellatum* sp. nov.
- 4 (1) Mandible partly yellow, with a small median black spot; clypeus black, lateral yellow; paraocular yellow maculation rectangular; 6 mm *A. (s. str.) xinjiangensis* sp. nov.

Males

- 1 (2) Mesosomal pleuron black, without yellow marks; lateral angle of vertex with yellow striae; axillae black; scutellum with two triangular yellow marks; most part of hind tibiae black; 6-7 mm *A. (s. str.) borealis* sp. nov.
- 2 (1) Mesosomal pleuron with a large rectangular mark; vertex with a broad yellow stria; yellow maculation on anterior lateral of mesoscutum curved; scutellum with 2 round yellow maculations; hind tibiae yellow; 5-6 mm *A. (s. str.) scutellatum* sp. nov.

1 *Anthidiellum* (*s. str.*) *scutellatum* sp. nov. (Figs. 1-2)

Male. Length 6 mm. Mandible 4-toothed; clypeus wider than long, apical margin slightly emarginated; punctures on clypeus, paraocular area and supraclypeus coarse; vertex, genae, mesonotum and mesopleuron with coarsely punctured; scutellum with coarse and large punctures; length of 1st flagellum equal to 2nd; scutellum broad, apical margin thin and slightly emarginated, conspicuously overhanging above metasoma and propodeum; anterior margin of mesopleuron laminated; punctures on T1-T6 larger and sparser than mesosoma; lateral part of T6 rounded,

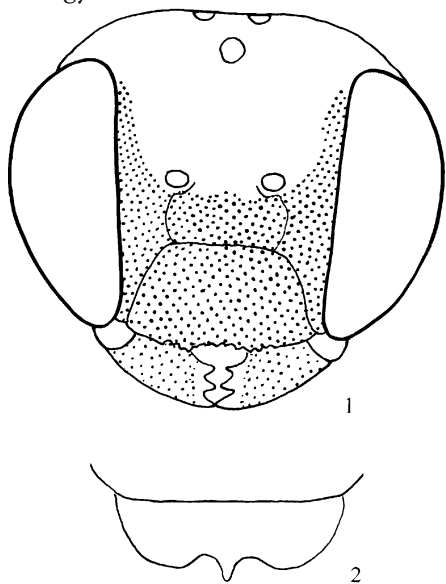
the median emargination with a small tooth (Fig. 2). Most part of body yellow: mandible (except apical tooth), clypeus, paraocular marks extending apex of eye, supraclypeus, lateral angle of vertex, posterior angle of pronotum, baso lateral angle of mesonotum quadrate form marks of pleuron, 2 round marks of scutellum, anterior part of tegulae, under surface of fore and mid femora, apical part of hind femora and all tibiae, tarsi, small lateral marks on T1, large lateral marks on T2-T5, T6 (basal part with triangular black mark) all yellow; apical margin on T1-T5 yellow brown; wings brownish, apical margin and marginal cell darker. Pubescence white, sparse.

Female unknown.

Holotype ♂, Xinjiang, Wusu laoche paize (44. 4° N, 84. 6° E), 20 June 1957, WAN Guan.

Closely allied to *Anthidiellum crassepunctatum* Popov, but differs in T2 normal, not lateral flattened; apical margin of T5 normal, without median sharp tooth; apico-lateral margin of T6 rounded, with median small tooth, not triangular form.

Etymology. Named after the scutellum broad.



Figs. 1-2. *Anthidiellum* (s. str.) *scutdlatum* sp. nov.
♂. 1. Head 2. T7.

2 *Anthidiellum* (s. str.) *xinjiangensis* sp. nov. (Fig. 3)

Female Length 6 mm. Mandible 5 toothed; clypeus, paraocular area, supraclypeal area, vertex and genae with large and sparse punctures; frons with dense wrinkle form punctures; 1st flagellum slightly longer than 2nd; punctures on mesonotum, anterior part of pleuron, scutellum and basal part of T1 larger

than on head; margin of scutellum thin laminated, overhanging above metasoma; puncture on T1 and T2-T5 median size; T6 with dense punctures, apical margin rounded, zigzag. Body black, with yellow marks and striae; longitudinal yellow stria on lateral part of clypeus, middle and anterior margin black; mandible yellow (except middle black); paraocular area with a large yellow spot; large yellow marks on lateral angle of vertex; anterior lateral angle of mesosoma with small yellow mark; large yellow marks on apex of scutellum; tegulae brown, basal part yellow; wings brownish; T1-T2 with lateral yellow marks, T3-T5 with two closed yellow marks; T6 black; apex of fore and mid femora yellow, outer surface of tibiae with yellow brown mark; tarsi yellow; apex of hind femora, basal part of 3rd-4th tarsi yellow. Body covered with white and sparse hairs; area around antennal socket, pleuron and legs more dense; scopa white.

Female unknown.

Holotype ♀, Xinjiang, Dushanzi (44. 3° N, 84. 8° E), 450 m, 26 June 1957, HUANG Chun Pei. Paratypes same as in holotype, 430 m, 25 June 1957, 1 ♀, HUANG Chun Pei.

Similar to *Anthidium cribratum* Morawitz, but differs in supraclypeal area black, without small yellow mark; axillae black, not yellow; yellow marks on metasomal tergites all small and separated; yellow marks on anterior margin of metanotum larger.

Etymology. Named after the specimens collected from Xinjiang Aut. Reg.

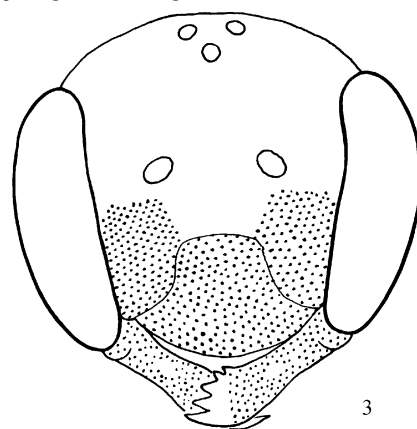


Fig. 3. *Anthidiellum* (s. str.) *xinjiangensis* sp. nov.
♀, head.

3 *Anthidiellum* (s. str.) *borealis* sp. nov. (Figs. 4-11)

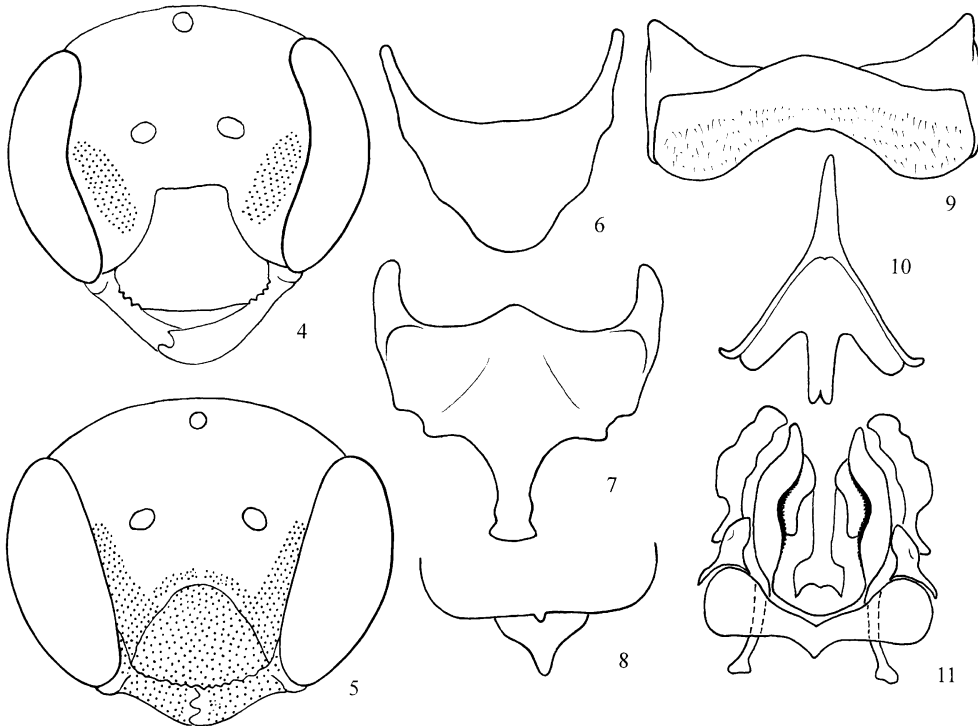
Male length 6-7 mm. Head quadrate; mandible 3 toothed; punctures on clypeus and paraocular area

large and regular; supraclypeal area with sparse punctures; frons and vertex with larger and denser punctures; 1st flagellum longer than 2nd, but shorter than 2nd + 3rd; occipital carina normal; anterior carina of mesopleuron conspicuously, upper part of margin with shallow emargination; mesosoma and pleuron with large and dense punctures; scutellum overhanging above metasoma, margin rounded with shallow concave; T1-T5 with larger and sparser punctures, punctures on T6 dense, margin rounded, with a small tooth in the median emargination; margin of T7 sharp toothlike; ST7-ST8 and genitalia see as in Figs. 7-11. Body black with yellow marks: clypeus, mandibles (apex black), paraocular area (slightly over antennal socket), supraclypeal area with transverse yellow mark (some without), lateral angle of vertex with transverse stria, pronotum lobe, anterior margin of mesosoma with lateral transverse marks, apex of scutellum with two closed large marks; apical part of fore femora, apical part of mid and hind femora; fore and mid tarsi, basal part of hind tibiae, apex and lateral margin, tarsi yellow; upper part of tegulae, T1-T2 with lateral oval marks; middle of T3-T5 with an oval mark, lateral with small yellow spot; T6-T7 yellow. Labrum

brown, lower part of tegulae yellow brown; wings brownish, outer margin darker. Body covered with white sparse hairs; area around antennal socket, apical margin of scutellum, outer surface of legs with dense hairs; metasomal sternites with long and dense white hairs.

Female length 6-7 mm. The main differences from male: body's yellow marks not rich; paraocular marks (below clypeal suture) yellow, outer surface of fore tibiae black; most part of mid tibiae black, basal part with a yellow stria; hind tibiae black; scopa golden yellow; T3-T5 without yellow marks.

Holotype ♂, Beijing (38.7° N, 108.8° E), 11 June 1984, GE Su Mei. Paratypes: 1 ♂, 14 July 1974, 3 ♀♀, 1 ♂, 11 June 1984, 1 ♀, 7 June 1984, Beijing, GE Su Mei; 1 ♂, 2 Aug. 1981, Jiling, Erdao Baihe (42.3° N, 128.1° E), WU Yan Ru; 1 ♀, 23 July 1937, Hebei (Chahar, Yangkiaping); 1 ♀, 14 July 1971, Heilongjiang, Wudalianchi (48.7° N, 126.2° E); 21 ♂♂, 14 ♀♀, Shandong, Jinan (Tsinan) (36.6° N, 117.0° E), 500-700 m; 1 ♂, 12 Aug. 1983, Sichuan, Lico., Miyalu (31.6° N, 102.8° E), 2700 m, ZHANG Xiu Zhong.



Figs. 4-11. *Anthidiellum (s. str.) borealis* sp. nov. 4. ♀ Head. 5. ♂. 5. Head. 6. ST6. 7. ST7. 8. T6-T7. 9. ST4. 10. ST8. 11. Genitalia.

Close allied to *Anthidiellum strigatum* Panzer, but differs in mesopleuron black, without yellow marks; axillae black, not yellow (outer with yellow stria in some specimens); T3-T6 with two median large yellow marks, outer without yellow marks; femora black, apex yellow; outer surface of hind tibiae with black mark, *A. strigatum* with black marks on outer surface only, other legs all red-yellow.

Etymology. Named after all the specimens collected from north part of China.

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小黄斑蜂属 1904 在中国的首次发现及三新种记述 (蜜蜂总科, 切叶蜂科, 黄斑蜂族)

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摘要 小黄斑蜂属 *Anthidiellum* Cockerell, 1904 为中国首次报道的属。记述中国切叶蜂科小黄斑蜂属 *Anthidiellum* Cockerell, 小黄斑蜂亚属 *Anthidiellum s. str.* Cockerell 的种类, 并编制了 3 新种的检索表, 3 新种是: 大盾小黄斑蜂

Anthidiellum (s. str.) scutellatum sp. nov., 北方小黄斑蜂 *Anthidiellum (s. str.) borealis* sp. nov., 新疆小黄斑蜂 *Anthidiellum (s. str.) xinjiangensis* sp. nov.。模式标本均保存于中国科学院动物研究所。

关键词 蜜蜂总科, 切叶蜂科, 黄斑蜂族, 小黄斑蜂属, 新种, 中国。

中图分类号 Q969.557.1