

ADDITIONS AND CORRECTIONS TO THE LIST OF NEARCTIC SPECIES OF DIANTHIDIUM (HYMENOPTERA, APOIDEA)¹

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Two new species of *Dianthidium* which have come to my attention since my paper on this genus was published, in 1943 (see JOURNAL NEW YORK ENTOMOLOGICAL SOCIETY, Vol. 51, pp. 71-109), both run to couplet 9 in the key to the females (pp. 72-74). This couplet may be revised as follows:

- 9 . Punctures of mesoscutum all of one size, except that they may become finer and denser on anterior middle 9a
 Mesoscutum with close, minute punctures that become denser on anterior middle, and with scattered coarse punctures; punctures of frons very coarse, those of clypeus and mesopleura hardly smaller; clypeus, frons, and sixth tergite immaculate black; yellow band on tergites 1 to 4 interrupted on each side, that on 2 to 4 interrupted also in middle; tergite 5 with two submedian yellow marks *discors* n. sp.
- 9a. Punctures of frons close and at most only slightly coarser than those of mesoscutum 9b
 Punctures of frons coarse and well separated, those of mesoscutum being much finer and becoming very fine and dense on anterior middle; base of abdomen more or less red; color and maculations otherwise much as in *discors*, except for a small additional spot on each side of tergite 5 *implicatum* n. sp.
- 9b. Large, more coarsely punctured species, resembling *sayi*, with the legs mainly red *subrufulum* Timb.
 Smaller species, with punctures of frons and mesoscutum fine and close, and those of mesopleura rather coarse *pudicum* (Cresson)

Dianthidium discors new species.

Easily distinguished from all our other species of *Dianthidium* by the coarsely punctured frons and by the dually punctured mesoscutum.

FEMALE.—Black, with pale-yellow markings as follows: sides of face, including area between clypeus and eye and extending narrowly to level of anterior ocellus; short line behind upper part of eye; pair of small quadrate

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spots on anterior margin of mesoscutum; small spot on tubercles and on axillæ; apical margin of scutellum; band on tergites 1 to 5, interrupted on each side on 1 to 4 and also in middle on 2 to 5, the band on 5 being restricted to two submedian marks; streak on outer inferior margin of anterior and middle femora, and spot at base of all the tibiæ. Tegulæ and wing bases bright ferruginous. Extreme apices of femora and tibiæ, the apical joints of tarsi, spur of hind coxæ, and apex of first ventrite ferruginous. Apical third of mandible reddened. Flagellum a little reddened beneath. Wings subfuliginous, darker in marginal cell. Nervures piceous. Cutting edge of mandible a little concavely oblique, with the preapical notch very small. Face shining, the punctures of frons coarse and well separated, those of remainder of face a little finer and closer, and those of cheeks much finer. Mesopleura shining, with coarse, close punctures a little finer than those of frons. Mesoscutum polished and shining between very fine, close punctures which become dense on the anterior middle. Interspersed on mesoscutum are also large, scattered punctures, not quite so coarse as those of clypeus. Scutellum similarly sculptured, but with some gradation between the coarse and fine punctures. Tegulæ finely punctured. Tergites coarsely punctured, the punctures about like those of mesopleura and becoming coarser on middle of the first tergite. Pubescence white, densest as usual on sides of thorax. Hair of mesoscutum fine, short and appressed, and imparting a whitish bloom. Ventral scopa pale ochreous. Length, 8 mm.; anterior wing, 6.5 mm.

Holotype, female, Sierra Blanca, Texas, 4,500 feet, June 24, 1942 (H. A. Scullen), in the collection of the California Academy of Sciences.

***Dianthidium implicatum* new species**

This species resembles *D. pudicum* (Cresson) in structure of mandibles, but is easily distinguished by the coarse, well-separated punctures of the frons.

FEMALE.—Color and markings nearly as in *discors*, but base of abdomen more or less red (tergite 1 and part of tergite 2 red in holotype; tergites 1 and 2, most of 3, and part of tergite 4 red in paratype). Yellow spots on anterior margin of mesoscutum and on tubercles larger than in *discors*. A yellow mark also present on tegulæ; yellow marks on axillæ and on apical margin of scutellum form a continuous band. Markings of abdomen as in *discors*, except that a small yellow spot is present on each side of tergite 5. Apex of middle and hind femora with a pale-yellow spot above, the markings of legs otherwise as in *discors*. Wings slightly tinged with fuliginous, becoming darker in marginal cell. Cutting edge of mandible almost straight, the preapical notch very small. Face polished, with coarse, well-separated punctures on the frons, and close, somewhat finer punctures below antennæ. Mesoscutum tessellate and dull between the fine, close punctures, which become minute and very dense on anterior middle. Scutellum and mesopleura shining with coarse, close punctures about like those of clypeus. Punctures

of abdomen a little smaller and more separated than those of scutellum. Pubescence of mesoscutum short and subappressed, but considerably sparser than in *discors*. Ventral scopa pale ochreous. Length, 6.5–7 mm.; anterior wing, 5.5 mm.

Holotype, female, Morongo Valley, San Bernardino Co., California, on *Gutierrezia lucida*, Sept. 27, 1941 (P. F. Timberlake), in collection of the Citrus Experiment Station. Paratype, female, 15 miles north of El Paso, Texas, June 23, 1942 (H. A. Scullen).

CHANGES IN NOMENCLATURE

In the writer's recent article on *Dianthidium* there are two serious errors in identification, which now need to be corrected, and which involve changes in the nomenclature of three species.

In 1940 Mr. Schwarz described *D. heterulkei* from Elk Lake, Deschutes National Forest, Oregon. In my paper I failed to recognize this species, as I relied too much on the figure of the male pygidium, which shows the median process too short and blunt. Since then I have seen the types of *heterulkei*, and my *D. fraternum hirtulum* proves to be identical (new synonymy). The names involved need correction as follows:

***Dianthidium heterulkei heterulkei* Schwarz.**

D. heterulkei Schwarz, 1940, Amer. Mus. Novitates, 1058, p. 6.

D. fraternum hirtulum Timberlake, 1943, Jour. N. Y. Ent. Soc., 51, pp. 92, 94.

***Dianthidium heterulkei fraternum* Timberlake.**

D. fraternum fraternum Timberlake, 1943, l.c., p. 92.

The other error involves the use of the name *Dianthidium consimile* (Ashmead). In 1928 Mr. Schwarz reported that he considered *D. provancheri* Titus a synonym of *D. consimile*. In my paper I considered that Ashmead had described the southern California form of *D. dubium* Schwarz, because of the mention of two yellow spots on the sixth tergite of the female. The material that I identified as *provancheri* had the sixth tergite of the female immaculate. I now have a series of 6 females reared from a nest collected on Piute Butte, Los Angeles Co.,

of which 3 have the sixth tergite immaculate and 3 have the same segment marked with two yellow spots. I have also examined Ashmead's type in the National Museum and can thus reaffirm the synonymy first proposed by Schwarz. The change in use of the name *consimile* involves two species, *D. pudicum*, and *D. dubium*, as follows:

***Dianthidium pudicum consimile* (Ashmead).**

Anthidium consimile Ashmead, 1896, Ent. News, 7, p. 25.

Dianthidium provancheri Titus, 1906, Proc. Ent. Soc. Washington, 7, p. 165.

D. pudicum provancheri Timberlake, 1943, Jour. N. Y. Ent. Soc., 57, pp. 99, 102.

***Dianthidium dubium dubium* Schwarz.**

D. dubium Schwarz, 1928, Jour. N. Y. Ent. Soc., 36, p. 404.

D. consimile dubium Timberlake, 1943, *l.c.*, p. 103.

***Dianthidium dubium mCCRACKENAE* Timberlake.**

D. consimile mCCRACKENAE Timberlake, 1943, *l.c.*, p. 104.

***Dianthidium dubium dilectum* new subspecies.**

D. consimile consimile Timberlake, 1943, *l.c.*, p. 103 (*nec* Ashmead).

Distinguished specifically by the characters given in my table on p. 98 (*l.c.*) under *consimile* (*nec* Ashmead), and subspecifically from the other races of *dubium* by the much fuller and brighter yellow maculations.

FEMALE.—Black, with bright-yellow maculations as follows: clypeus, small supranalyteal spot, sides of face almost to summit of eyes, oval spot on middle of frons; transverse band on vertex, sometimes interrupted medially, and broad line behind eyes; two large spots on anterior margin of mesoscutum, large spot on tubercles, comma-shaped mark on tegulae; axillae and broad apical margin of scutellum; very large mark on mesopleura, small spot on metapleura, and small prespiracular spot on sides of propodeum; broad band on tergites 1 to 6, usually interrupted medially on 2 to 5, notched medially in front on 6, notched on each side behind on 1 to 3 and on 6, and usually with enclosed black spot on each side behind on 4 and 5; apex of femora and broad stripe beneath on front and middle pair; all tibiae except beneath, and all basitarsi. Mesoscutum dull, finely and densely punctured. Punctures of frons finer and closer than in *pudicum*. Punctures of mesopleura a little separated. Pubescence of the usual density on head and sides of thorax, that on the mesoscutum very short and inconspicuous. Ventral scopa ochreous. Length, 6.5–8 mm.; anterior wing, 5.5–6 mm.

MALE.—Markings as in the female, except supraelyteal and frontal spots small (the latter often absent), the band behind ocelli absent, mark on mesopleura smaller, marks on metapleura and sides of propodeum absent, abdom-

inal bands with a broad posterior emargination on each side, and band on tergites 3 to 6 strongly notched anteriorly in middle or interrupted. Markings same color as in female, except that those of face and anterior marks of mesoscutum are whitish. Male differs from that of typical *dubium* in having the tergites not reddened and testaceous at apex, the yellow bands of abdomen brighter, those on tergites 1 and 2 usually entire (divided into three or even four spots in *dubium*), and outer side of all tibiae usually entirely yellow. Punctures of mesopleura close (usually more separated in typical *dubium*). Length, 7-9.5 mm.; anterior wing, 6-7.25 mm.

Holotype, female, and allotype, from Camp Baldy, San Gabriel Mts., California, at flowers of *Stephanomeria cichoriacea*, Aug. 21, 1929 (Timberlake), in collection of the Citrus Experiment Station. Paratypes as follows: 4 males, 4 females, Camp Baldy, on *Stephanomeria* and on *Verbena prostrata*, Aug. 18 and 21, 1929; 1 female, Camp Baldy, on *Eriogonum fasciculatum*, Aug. 22, 1920; 1 female, Sheep Creek, San Gabriel Mts., on *Eriodictyon trichocalyx*, June 3, 1928; 2 males Mt. Lowe, reared from nest collected in fall of 1912 (issued July 26, 1914); 2 males, Lone Pine Canyon, San Gabriel Mts., on *Eriodictyon trichocalyx*, July 4, 1933; and 3 males, Mountain Home Creek, San Bernardino Mts., about 4,300 feet, on *Phacelia ramosissima* and *Corethrogyne flaginifolia*, Aug. 14, 1934, and on *Eriogonum fasciculatum*, Aug. 24, 1944 (all Timberlake).

A male collected at Andreas Canyon, near Palm Springs, on *Lotus scoparius*, April 14, 1946, is a form of *D. dubium*, near *dilectum*, but will perhaps deserve a name when more material is available. It has the supraclypeal and frontal spots and band on vertex absent, the stripe behind the eye very short; anterior marks on mesoscutum very small; band on tergite 1 divided into three marks, that on four following segments narrowly interrupted medially, while that on tergite 6 is represented by a small spot on each far side; a dark spot on outer side of hind tibiae at the middle, and the front and middle tibiae black behind on outer side.



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