On the Subfamily Astatinae. Part VII. The Genus *Diploplectron* Fox (Hymenoptera: Sphecidae)[1]

FRANK D. PARKER
Entomology Research Division, Agric. Res. Serv., USDA, Columbia, Missouri 65201

ABSTRACT

Eighteen species of *Diploplectron* are recognized; 15 species from the New World are keyed, described, discussed, and their relationships are evaluated. The biology of the genus is snmmarized, and new information on nesting habits and prey records are presented for *D. peglowi* Krombein, *D. fossor* Rohwer, and *D. vierecki* Pate. NEW SYNONYMY includes: *D. rufoantennatum* Rohwer placed under *D. fossor* Rohwer; *D. relativum* Rohwer, *D. cressoni* Rohwer, and *D. ashmeadi* Rohwer placed under *D. ferrugineum* Ashmead. ***D. beccum, D. sierrense, D. californicum, D. neotropicum, D. irwini, D. secoense,*** and ***D. orizabense*** are new to science.

The genus *Diploplectron* is a small group of wasps that to the inexperienced observer look like ants. They are often found in grassy areas or seen crawling about matlike weeds. These small wasps are quick and often elude the collector by hiding under a protecting leaf or stem rather than flying up into the net. Most species are found in the Nearctic Region but representatives are also found in the Neotropical, Palearctic, and Ethiopian Regions. Previous authors described 11 species; 7 new species are described here .

Fox (1893) established the genus *Diploplectron* based on Cresson's description of *Liris? brunneipes* (1881). The chronicle of the 8 described North American species is: Ashmead (1899) proposed 3 names, but only one is valid; Rohwer (1909) named 6 species, but all except one are synonyms; Krombein (1939) added one species; Pate (1941) describe 2 new species, and Williams (1946, 1950) 2 more.

Species of Old World *Diploplectron* are few and they appear to comprise 3 groups that are distinct from one another and from North American forms. Brauns (1899) described a species from South Africa, and Pulawski (1958, 1965) described 2 species, one from North Africa and one from Western Russia.

Diploplectron Fox

Diploplectron Fox, 1893: 38. Type-species: *Liris? brunneipes* Cresson. Monobasic.

General Appearance.—Small, 4–7 mm, antlike wasps. Head and thorax black (one species red); abdomen either black or red (one species red and black); wings generally light brown, hindwing of males from North America with apical brown spot (except one species); punctation of body generally coarse, most species with propodeal enclosure dull and granular.

Head.—Compound eyes dichoptic in both sexes; flagellomeres variable in length, males with ventral tyloides on some segments, flagellomere V of males shorter than either IV or VI; median clypeal lobe of males produced, either pointed apically, or truncate, or excised medially, or forked; females with bilobed median clypeal lobe; 2nd labial palpomere symmetrical; setae on labrum simple; malar space of males variable but most species wider than diameter of midocellus; base of mandible meeting compound eye in females; mandible and lower part of frons with white markings in some species; least interocular distance variable; pubescence of head generally moderate, more dense on postocular areas; clypeal bristles dark.

Thorax.—Punctation of propodeum generally coarse, dull; other parts of body variable but generally sternum, legs, abdomen more finely sculptured; pronotal lobe in some species white, on others red or black; episternal sulcus complete to forecoxal cavity; 2 midtibial spurs in both sexes; midcoxae, femora not modified; in profile notum flattened, not bulbous, notauli often evanescent; dorsal surface of pronotum curved towards posterior in profile, especially in males; pubescence moderate, usually longer on anterior margin of scutum, laterally on propodeum.

Wings.—Marginal cell of forewing reduced, not longer than stigma; 1st submarginal cell widest, 1st recurrent vein received by 1st submarginal cell, interstitial or ending in 2nd; 2nd submarginal cell shorter than 1st, rarely absent in mutant specimens; hindwing jugal and anal excisions deep.

Abdomen.—Punctation less dense; male sternites without hairbrush, apical margin not modified; sternite VIII generally obtuse or truncate apically; pygidium of females without spines along lateral margin.

Systematics.—Males of *Diploplectron* are dichoptic and easily distinguished from the holoptic genera *Astata* and *Dryudella*. The other dichoptic genus, *Uniplectron,* can be separated by its longer flagellomere V and metallic blue color. Females of *Diploplectron* are difficult to separate from those of *Dryudella* but the shape of the head is diagnostic. In *Diploplectron* the head when viewed from above is quadrate and about twice as broad as long; in *Dryudella* the head is more oval and ca. 3 times as broad as high. Also, most females of *Dryudella* have both recurrent veins ending in the 2nd submarginal cell whereas in most species of *Diploplectron* the 1st recurrent vein ends in the 1st submarginal cell or is interstitial. The length of *Diploplectron* ranges from 4 to 7 mm, whereas *Dryudella* are larger, 7–10 mm.

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Diploplectron is neuter, not masculine as it was previously considered, and consequently the endings of several names have been changed.

Pulawski (1965) suggested that species of *Diploplectron* are specialized and that they may have developed from a holoptic ancestor. I believe the genus is rather unspecialized and that the archetype was dichoptic. The wing venation of *Diploplectron* is specialized in that the size of the cells is reduced, but other wing and body characters are more generalized than species of *Astata* and *Dryudella:* males have a less specialized wing shape (lack of enlarged anal lobe), and the eyes are dichoptic. Also members of *Diploplectron* lack modifications on their sternites and legs. The nesting habits also indicate the more generalized placement of *Diploplectron* as their nests are not complex like those found among *Astata*.

SPECIES GROUPS

The North American species can be separated into 5 closely related groups. The *beccum* group is distinguished by the clear hindwing in the males; the coarsely punctured hypoepimeron and the narrow, well-developed pygidium separate the females. A single species is known. It is an intermediate between the *brunneipes* and *vierecki* groups in some characters.

Most Nearctic species are in the *brunneipes* group and can be separated by the median clypeal lobe which forms 2 sharp teeth, and the shiny and spiculate body, especially in the females. All but one species is black. Included species are *brunneipes* (Cresson), *fossor* Rohwer, *peglowi* Krombein, *ferrugineum* Ashmead, *sierrense,* n. sp., and *californicum,* n. sp.

The *kantsi* group consists of 4 species: *kantsi* Pate, *reticulatum* Williams, *diablense* Williams, and *neotropicum,* n. sp. All have a red abdomen. The median clypeal lobe is obtuse or truncate in the males; females have broad and round clypeal teeth. The body surface is dull and coarsely punctured.

The *vierecki* group also has a red abdomen, but the clypeal lobe is excised in males, and the body is shiny and spiculate. The included species are *vierecki* Pate, *irwini,* n. sp., and *secoense,* n. sp.

The *orizabense* group consists of a single species described from 1 ♀. However, the formation of the head is unique in *Diploplectron* (Fig. 33). Without the males, its placement among the other species groups is uncertain, but the female is similar to those of the *vierecki* group.

The 3 Old World species can be separated from the New World forms by the presence of a setal brush on the hindleg of Old World species. This brush is found in other genera of the New World, but not in *Diploplectron. D. kriegeri* Brauns is a peculiar species in that the integument is rippled by close, thin ridges. No other known species even approach this type of punctation. The other 2 species, *palearcticum* Pulawski and *asiaticum* Pulawski, are quite small (4 mm) and rather impunctate. They are easily distinguished from each other by characters on the clypeus. The males of these 2 species have the ocelli lower on the frons than other species groups.

BIOLOGY

Detailed studies on the biologies of *Diploplectron* are lacking, but some observations have been made on their nesting habits, and some females have been captured with their prey. Nests are made in the ground, and the prey are nymphs or adults of Hemiptera.

D. peglowi.—Williams (1946) found a colony of this species near San Francisco, Calif., and he recorded the following observations: prey—nymphs of *Sphragisticus nebulosus* (Fallén) (Lygaeidae); nest—made in the sand and consisting of several bugs per cell; egg—laid on the breast of one of the bugs.

I found a nest of this species at Davis, Calif., IX-20-64 and took the following notes: site—west slope on the bank of Putah Creek, near clumps of Bermudagrass; nest—entered the ground at an angle of 60°, and the burrow extended 11 cm; the nest consisted of a plugged cell at the end of a straight burrow with a slight antechamber before the cell (the female was captured in the antechamber); prey—3 nymphal rhopalids, prob. *Aufeius impressicollis* Stål, one had an egg attached between the forecoxae; the bugs were placed on their backs, head toward the rear of the cell; nest orientation—female flew directly into the nest without circling the entrance.

D. californicum.—Williams (1964) recorded 2 prey records for this species, both were lygaeids, adults of *Rhyparochromus californicus* Van Duzee and nymphs of *?Emblethis vicarius* Horvath. Pinned with a female from Menlo Park, Calif., is an adult lygaeid, *Megalonotus chiragrus* (F).

D. fossor.—In the summer of 1964, R. M. Bohart and I found a small colony of this species near the summit of Mt. Rose, Nev. The site was a sloping gravelly area with small clumps of grass. One nest was found during excavation of a nest of *Belomicrus,* another genus of Sphecidae. Most of the nest was destroyed before it was discovered, but a cell containing the female and prey was found. The prey were nymphs of Mirids, *Labops* sp.

D. vierecki.—Pinned with a female from Highway, N. Mex., is a nymphal cydnid, *Microporus obliquus* Uhler.

SYSTEMATICS

Key to the North American *Diploplectron*

Males

1. Hindwing with apical cloud 2
   Hindwing hyaline except for brown veins .... *beccum,* n. sp.
2. Median clypeal lobe snout-like, either truncate or obtuse apically; mesopleuron reticulate, abdomen red 3
   Median clypeal lobe forked or excised medially; mesoplueron shiny, spiculate; if abdomen red, head, thorax also red 6
3. Clypeus, lower frons with white markings; least ocellocular distance shorter than diameter of lateral ocellus (Fig. 18) 4
   Clypeus black; mandible sometimes white medial-

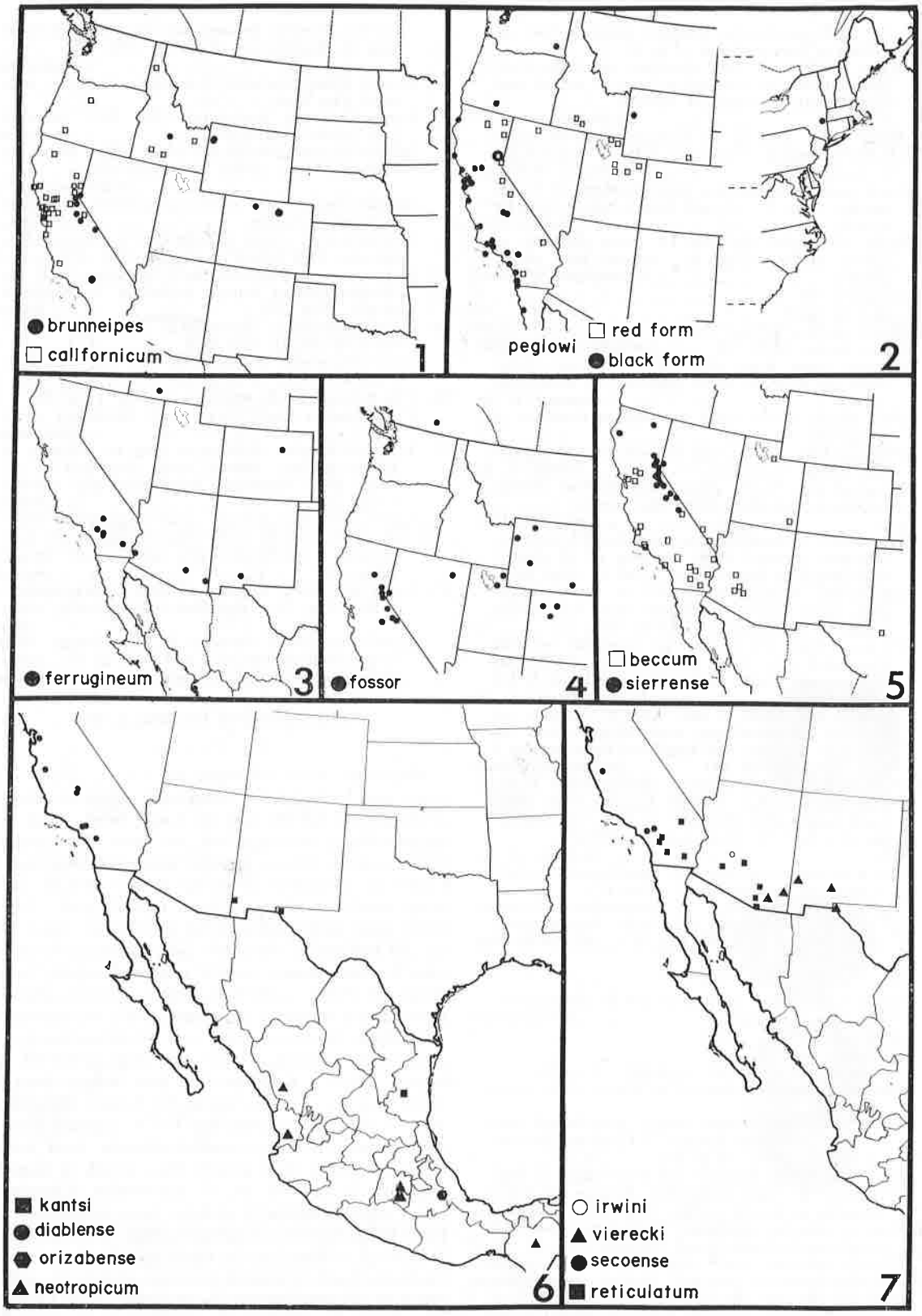

FIG. 1–7.—Maps of known distribution of species of *Diploplectron*. 1, *brunneipes, californicum;* 2, *peglowi;* 3, *ferrugineum;* 4, *fossor;* 5, *beccum;* 6, *orizabense, kantsi, diablense, neotropicum;* 7, *vierecki, irwini, secoense, reticulatum.*

ly; least ocellocular distance greater than diameter of lateral ocellus (Fig. 8) 5
4. Malar space less than diameter of midocellus; least interocular distance as long as pedicel plus flagellomere I; southern Mexico ..... ***neotropicum***, n. sp.
Malar space as wide as diameter of midocellus; least interocular distance as long as flagellomere I; California ..... ***diablense*** Williams
5. Least ocellocular distance twice diameter of lateral ocellus (Fig. 7); clypeal lobe minutely truncate apically ..... ***kantsi*** Pate
Least ocellocular distance 1.5 times diameter of lateral ocellus (Fig. 8); clypeal lobe obtuse apically ..... ***reticulatum*** Williams
6. Abdomen red 7
Abdomen black 10
7. Head, thorax mostly black 8
Head, thorax rusty red ..... ***ferrugineum*** Ashmead
8. Clypeus, lower frons with white markings; malar space as long as twice diameter of midocellus ..... ***secoense***, n. sp.
Face black; malar space as long as diameter of midocellus 9
9. Pronotal lobe white; frons coarsely pitted; tyloides flat, linear; autumnal ..... ***irwini***, n. sp.
Pronotal lobe black; frons with shallow macropunctures; tyloides nipple-like; vernal ..... ***vierecki*** Pate
10. Interocellar triangle higher than broad; least interocular distance short, as long as or shorter than length of flagellomeres I and II (Fig. 13)..11
Interocellar triangle equilateral or broader than high; least interocular distance wide, longer than length of flagellomeres I and II (Fig. 15) 12
11. Pronotal lobe white; base of mandible meeting compound eye; ratio between least interocular distance and length of flagellomeres I and II 1:2 (Fig. 13) ..... ***californicum***, n. sp.
Pronotal lobe black or red; base of mandible not meeting compound eye; ratio between least interocular distance and length of flagellomeres I and II 1:1.4 (Fig. 14) ..... ***peglowi*** Krombein
12. Face with white markings on clypeus, lower frons.13
Face black; ocellar triangle broader than high; least interocular distance as long as flagellomeres I and II; frons rather polished ..... ***sirrense***, n. sp.
13. Ocelli in equilateral triangle; flagellomere I nearly 3 times as long as broad (Fig. 17) ..... ***brunneipes*** (Cresson)
Ocellar triangle broader than high; flagellomere I twice as long as wide (Fig. 16) ..***fossor*** Rowher

Females

1. Head, thorax black (pronotum red in one species). 2
Head, thorax bright red ..... ***ferrugineum***
2. Abdomen red 3
Abdomen black 9
3. Ocellar triangle broader than high (Fig 23) 4
Ocellar triangle equilateral or higher than broad (Fig. 29) 7
4. Least interocular distance longer than flagellomere I; least ocellocular distance 1–1.5 times diameter of lateral ocellus (Fig. 35) 5
Least interocular distance less than length of flagellomere I; least ocellocular distance 0.5 times diameter of lateral ocellus (Fig. 23) ...***diablense***
5. Thorax closely punctured, reticulate, body not shiny; clypeal lobe deeply excised 7
Thorax spiculate, siny; clypeal lobe with shallow median excision; southern Mexico ..***neotropicum***
6. Least ocellocular distance 1.5 times diameter of lateral ocellus; breadth between lateral ocelli about half as long as flagellomere I (5/9) (Fig. 24) ..... ***kantsi***
Least ocellocular distance equal to width of lateral ocellus; breadth between lateral ocelli almost as long as flagellomere I (8/9) (Fig. 22) ..... ***reticulatum***
7. Ocellar triangle broader than high (Fig. 28); pronotal lobe black 8
Ocellar triangle equilateral (Fig. 29); pronotal lobe white; California ..... ***secoense***
8. Median clypeal lobe with 2 blunt teeth; propodeal enclosure with raised transverse ridges ..... ***orizabense*** n. sp.
Median clypeal lobe shallowly excised; propodeal enclosure granular ..... ***vierecki***
9. Hypoepimeron shiny, impunctate; pygidium weak, not over half length of tergite (Fig. 31) 10
Hypoepimeron shagreen, dull; pygidium well developed, lateral margin extending ⅔ length of tergite (Fig. 32) ..... ***beccum***
10. Least interocular distance as long as flagellomeres I and II (Fig. 27) 11
Least interocular distance less than length of flagelomeres I and II (Fig. 31) 13
11. Pits between ocelli small, or shallow (Fig. 26) ..12
Pits between ocelli large, well developed (Fig. 27) ..... ***brunneipes***
12. Least ocellocular distance as long as diameter of lateral ocellus; lateral ocelli separated by 1.5 times their diameter; interocular pits shallow (Fig. 26) ..... ***peglowi***
Least ocellocular distance twice diameter of lateral ocelli; lateral ocelli separated by twice their diameter; interocular pits small, well formed (Fig. 30) ..... ***sierrense***
13. Least interocular distance as long as flagellomeres I–III (Fig. 31); pygidium blunt apically, shiny ..... ***fossor***
Least interocular distance a little longer than length of flagellomeres I and II (Fig. 25); pygidium narrowed and dull apically ....***californicum***

Diploplectron beccum, n. sp.

(Fig. 5, 19, 32)

HOLOTYPE MALE.—Length ca. 5 mm. Black with ivory and brownish-red markings; white on clypeus mediobasally, lateral spot on lower frons, basal spot on mandible; brownish-red on most of mandible, tegula weakly, femora distally, tibiae and tarsi mostly, tinges on abdomen; forewing faintly stained, hindwing nearly hyaline, without typical spot. Pubescence pale, moderate on head and thorax, dense and ca. 2.0 midocellus diameters long on basal ⅔ of tergite I. Integument mostly microsculptured, rather shiny on vertex, scutellum, venter, femora, and tergites; frons minutely granulate, dull; hypoepimeron with dense microsculpture, rest of mesopleuron and propodeum laterally similar but with scattered spicules. Flagellar segment I a little longer than II, about twice as long as broad, VI longer than either V or VII, small tyloides on V–IX; median lobe of clypeus snout-like, tip rounded truncate; least interocular distance a little greater than length of flagellar segments I and II, ca. ⅔ interocular distance at lower edge of antennal sockets; least ocellocular distance twice diameter of lateral ocellus.

FEMALE.—About as in male except: body mostly black, no ivory, brownish red more restricted; pubescence of dorsum inconspicuous, bristly hair of mesosternum sparse; upper frons with faint but complete microsculpture, subshiny with scattered punctation, scutum partly polished, pleuron less spiculate. Flagel-

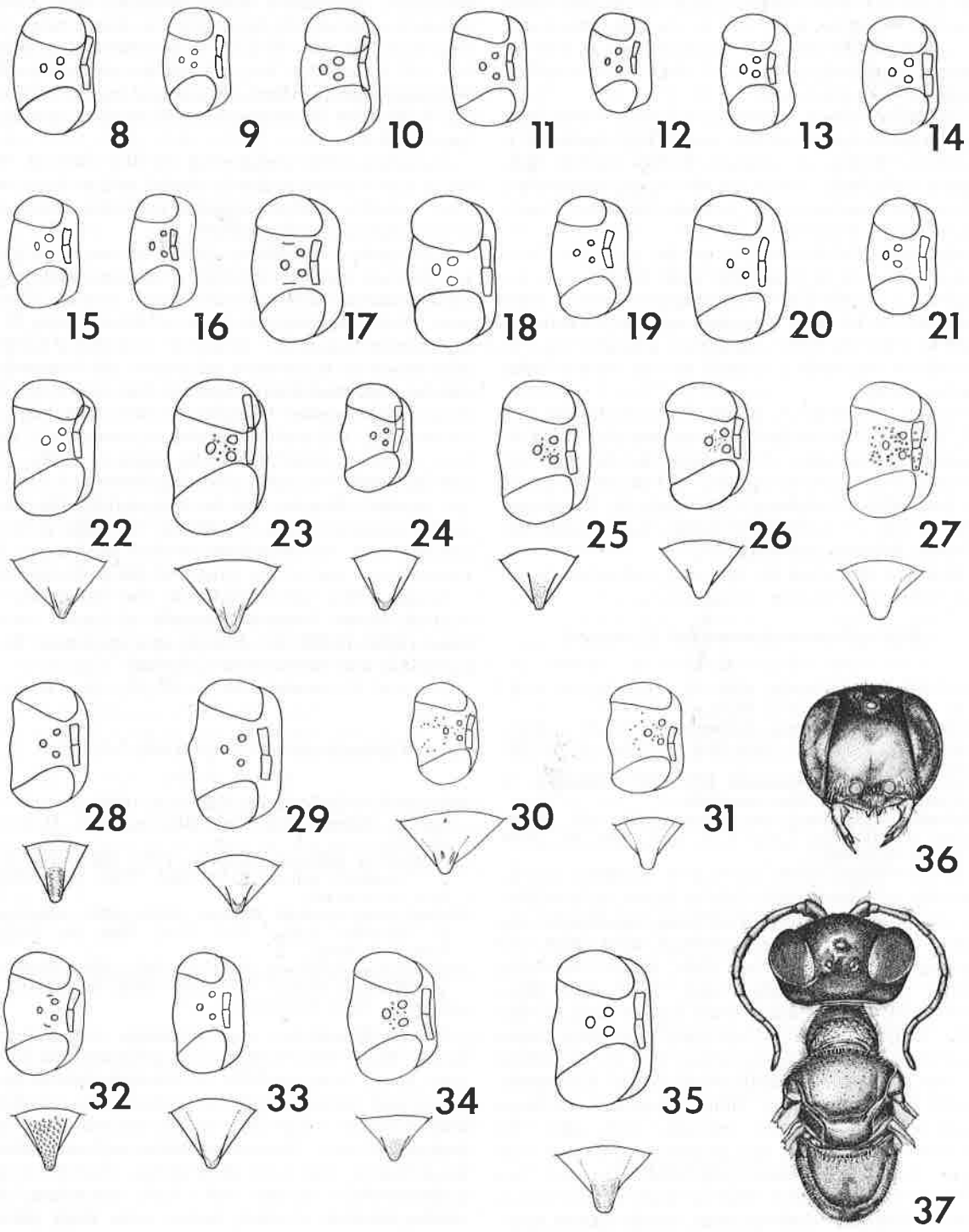

FIG. 8–21.—Dorsal view of head of male *Diploplectron* (flagellomeres I and II superimposed on vertex). 8, *reticulatum;* 9, *kantsi;* 10, *diablense;* 11, *vierecki;* 12, *irwini;* 13, *californicum;* 14, *peglowi,* 15, *sierrense;* 16, *fossor;* 17, *brunneipes;* 18, *neotropicum;* 19, *beccum;* 20, *secoense;* 21, *ferrugineum.*

FIG. 22–35.—Dorsal view of heads of female *Diploplectron* (flagellomeres I and II superimposed on vertex) and dorsal view of pygidium. 22, *reticulatum;* 23, *diablense;* 24, *kantsi;* 25, *californicum;* 26, *peglowi;* 27, *brunneipes;* 28, *vierecki;* 29, *secoense;* 30, *sierrense;* 31, *fossor;* 32, *beccum;* 33, *orizabense;* 34, *ferrugineum;* 35, *neotropicum.*

FIG. 36, 37.—*D. sierrense.* 36, Front view of face of male. 37, Dorsal view of head and thorax of male.

lar segments I–IV nearly equal in length, about twice as broad as long, V–IX gradually shortened, X a little longer than IX; median clypeal lobe bidentate, breadth at apex ca. 1.3 midocellus diameters; pygidium long, narrowed.

Variation.—Some specimens of both sexes have legs brighter red than the type. This tendency is especially obvious in southern California but dark-legged individuals occur in the same populations. Ivory facial markings may be more extensive, especially in southern specimens.

Systematics.—This species is the only one from North America in which the male hindwing is unspotted. Females can be distinguished from other dark species by their long and pointed pygidium as well as their minutely sculptured mesepimeron. *D. beccum* is not closely related to any of the other species groups.

Types.—Holotype ♂, Davis, Yolo Co., Calif., Oct. 12, 1961 (F. D. Parker). Paratypes, 24 ♂, 13 ♀, topotypical, collected from May to October (J. Downey, F. Parker, R. Bohart, A. Telford, M. Irwin, R. Bechtel, L. Shainberg, E. Schlinger). Metatypes, 205 ♂, 60 ♀ April to October, from California, Nevada, Arizona, and Utah; Fig. 5.

Holotype deposited in the type collection at the University of California, Davis campus.

Diploplectron brunneipes (Cresson)

(Fig. 1, 17, 27)

Liris? brunneipes Cresson, 1881: iii (Holotype ♀, "Col." no. 2017, Acad. Nat. Sci. Phila.).
Diploplectron bidentatum Ashmead, 1899: 56. (Holotype ♂, "Colo," U.S. Natl. Mus. no. 5063. *D. bidentatus*).
Diploplectron foxii Ashmead, 1899: 56. (Holotype ♀, "Colo," U.S. Natl. Mus. no. 5062).
Diploplectron bidentatiforme Rohwer, 1909: 121. (Holotype ♂, "Boulder, Colo," U.S. Natl. Mus. no. 14150. *D. bidentatiformis*).

MALE.—Black; white on most of mandible, clypeus, laterally on lower frons; reddish-brown on mandible, margin of clypeus except black teeth, mouthparts, legs partly, inside forefemur, foretibiae, tarsi; mid- and hindlegs darker; forewing light brown; hindwing mostly clear except apical spot. Pubescence short, white; moderate on lower frons, behind head, on thorax. Body rather shiny yet finely punctured; frons coarsely reticulate but becoming smooth at vertex; scutum entirely pitted with evenly spaced macropunctures; pleuron spiculate, shiny; propodeal enclosure finely granulate, laterally reticulate with many fine, sinuate oblique ridges; legs, abdomen more finely sculptured, shiny. Malar space quite small, separated from compound eye by less than ½ diam of midocellus; clypeal lobe with 2 sharp, stout, widely spaced teeth; flagellomeres stout, rounded beneath, I about twice as long as broad, V and VI flattened ventrally with round tyloides; least interocular distance almost as long as length of flagellomeres I-III; ocelli in equilateral triangle; lateral ocelli separated by 1.25 times their diameter; least ocellocular distance 1.25 times diameter of lateral ocelli; length 6 mm.

FEMALE.—About as in male except: no white markings; pubescence brownish-black; body more polished, quite shiny; hypoepimeron impunctate; interocellar area with 10–12 deep punctures, each bearing stiff black seta; less and coarser striae laterally on propodeum; pygidium with lateral margin extending ⅔ distance of tergite, broadly rounded apically; length 6–8 mm.

Variation.—The sculpturing on the face of the males varies from shallowly spaced pits to deep and close punctures. The propodeal enclosure has horizontal ridges on some specimens.

Systematics.—Krombein (1951) synonymized *fossor* Rohwer under *brunneipes* (Cresson) and listed *rufoantennatum* Rohwer as a distinct species. However, after examining the types of these names, it is my opinion that *fossor* is distinct and that *D. rufoantennatum* is a synonym of *fossor*. *D. brunneipes* can be separated from *fossor* in the males by the shape of the ocellar triangle—broader than high in *fossor* (Fig. 16) and equilateral in *brunneipes* (Fig. 17). Also, in *fossor* the malar space is wider, the antenna lighter in color, and flagellomeres I and II are shorter. Females can be separated by the same ocellar characters and, in addition, the body is more polished and the pygidium weaker in *fossor*. *D. brunneipes* is one of the largest of the dark species.

Range.—This species inhabits the mountains of western North America, generally at higher elevations (6000–10,000 ft). I have seen specimens from California and eastward to Colorado; Fig. 1.

Material Examined.—14 ♂, 21 ♀, May to September.

Diploplectron ferrugineum Ashmead

(Fig. 3, 21, 34)

Diploplectron ferrugineum Ashmead, 1899: 56. (Holotype ♂, "Cana," U.S. Natl. Mus. no. 5061. *D. ferrugineus*).
Diploplectron ashmeadi Rohwer, 1909: 122. (Holotype ♂, "Boulder, Colo.," U.S. Natl. Mus. no. 14142). NEW SYNONYMY.
Diploplectron cressoni Rohwer, 1909: 123. (Holotype ♀, "Boulder, Colo.," U.S. Natl. Mus. no. 14149). NEW SYNONYMY.
Diploplectron relativum Rohwer, 1909: 123. (Holotype ♀, "Boulder, Colo.," U.S. Natl. Mus. no. 14148. *D. relativus*). NEW SYNONYMY.

MALE.—Bright red, some specimens with abdomen mostly black; interocellar area, propodeal enclosure often black; ivory medially on mandible, lateral spots on clypeal margin, spot on malar space, pronotal lobe in some; wings only lightly stained, hindwing with apical spot. Pubescence white, moderate behind head, thorax; legs with black spines. Punctation not uniform; face mostly dull, finely granulate, but shinier towards clypeus; vertex more finely pitted; pronotum, pleuron coarsely punctured with raised granules, somewhat shiny; summit of scutum, scutellum shiny with scattered pits; propodeal enclosure with median longitudinal furrow; legs, abdomen more finely sculptured ventrally than dorsally. Malar space little less than diameter of midocellus; clypeal lobe produced apically with 2 sharp teeth; flagellomere I 3 times as long as wide, V–VII with ventral,

round tyloides; VIII and IX flattened beneath but without tyloides; ocelli in equilateral triangle; least interocular distance as long as scape plus flagellomere I; length 4.5–6 mm.

FEMALE.—About as in male except: no ivory markings; clypeus with black setae; teeth on clypeal lobe very short, with lateral tooth on margin near median lobe; body less punctured, shinier; propodeum laterally with 5–7 oblique striae; pygidium weakly developed, concave subapically.

Variation.—There are 2 color forms at most localities; one with a black abdomen and one with a red abdomen. Some specimens have darker markings on the thorax, especially at more northern localities.

Systematics.—Ashmead (1899) reported the locality of his type as Colorado, but the specimens were labeled "Cana." Because I have not seen any specimens from Canada and the distribution of this species is intermountain and lower deserts, it appears that the type may have been mislabeled. Rohwer's names are clearly synonyms but 2 of his types, *ashmeadi* and *relativum,* have more extensive areas of dark pigmentation on the sternum and propodeum.

This species is closely related to *peglowi* and future workers may synonymize these names because I can separate them only by color characters and slight differences in length of the malar space and least interocular distance. I have retained the specific names because the material examined is limited, especially the darker forms, and the populations appear to be geographically isolated.

D. ferrugineum, as its name implies, is readily distinguishable from all other *Diploplectron* by its rusty red coloration; no other species has most of the head and thorax red.

Range.—Known records suggest that this species inhabits the upper and lower sonoran deserts. A few specimens have been taken at the northern rim of the Great Basin and eastward as far as Colorado; Fig. 3.

Material Examined.—24 ♂, 12 ♀, January to October.

Diploplectron peglowi (Krombein)

(Fig. 2, 14, 26)

Diploplectron peglowi Krombein, 1939: 136. (Holotype ♂ "Granby Center sand dunes," Osewgo Co., N. Y., Acad. Nat. Sci. Phila. no. 4188).

MALE.—Black; creamy-white on mandible, clypeus, malar space, laterally on lower frons; reddish on mandible, clypeus, antenna entirely in some, legs entirely in some, pronotal lobe, tegulae; forewing only lightly stained, hindwing with apical spot. Pubescence short, silvery; moderate on lower face, behind head, thorax, base of abdomen; legs with black spines. Punctation moderate; lower face closely, coarsely pitted, dull but becoming more shiny, finely sculptured at vertex; thorax mostly pitted but shiny, some specimens with scutum shiny medially, mostly impunctate; pleuron spiculate; propodeal enclosure finely granulate, some specimens with median longitudinal furrow, lateral ridges interrupted by raised granules; sternum, legs, abdomen more shiny with larger macropunctures. Malar space variable but less than half diameter of midocellus; clypeal lobe with 2 short, sharp, stout teeth; flagellomeres stout, linear; I twice as long as broad; V and VI flattened ventrally with round tyloides; least interocular distance slightly less than length of flagellomeres I and II; ocellar triangle higher than broad (20/14); lateral ocelli separated by their diameter or less; least ocellocular distance slightly less than diameter of lateral ocellus; length 5–7.5 mm.

FEMALE.—About as in male except: no whitish markings; face, body more polished; setae on head, thorax light tan to black; interocellar area with 6–8 small, shallow pits; scutum, pleuron with scattered pits bearing stiff setae; pygidium narrowed apically, lateral margin extending ½ length of tergite, depressed and polished subapically.

Variation.—Considerable variation in color and punctation exists among populations of *peglowi.* The topotypic material has light red legs but among western populations the mid- and hindlegs are sometimes mostly black. Western mountain populations have extensive red markings on the thorax. The sculpturing of the face and scutum varies extensively within populations; the pattern ranges from granular-spiculate to coarsely reticulate.

Systematics.—*D. peglowi* is related *to californicum, brunneipes,* and *ferrugineum. D. peglowi* can be identified in the males by the narrower least interocular distance and the proximity of the lateral ocelli. Females of *peglowi* are more difficult to identify, but the smaller, shallow interocellar pits and the weakly developed pygidium are diagnostic.

A color form exists which has the prothorax extensively red. Populations of the form are generally found at higher elevations in our western mountains. These specimens also are more finely sculptured, but there are no evident morphological means of separating them from typical *peglowi.* This color form may mimic local ant populations.

Range.—Mostly western with records as far north as Canada and south to Mexico; all localities are shown in Fig. 2 except one in Canada: Norman Wells, N. W. T. The species was described from the East Coast but there are no records between eastern Colorado and New York; this gap may be a reflection of the paucity of eastern specimens.

Material Examined.—98 ♂, 80 ♀, April to November.

Diploplectron fossor Rohwer

(Fig. 4, 16, 31)

Diploplectron fossor Rohwer, 1909: 120. (Holotype ♀, "Florissant, Colo.," U.S. Natl. Mus. no. 14152).
Diploplectron rufoantennatum Rohwer, 1909: 120. (Holotype ♂, "Florrisant, Colo.," U.S. Natl. Mus. no. 14151. *D. rufoantennatus*). NEW SYNONYMY.

MALE.—Black with ivory and brown-red markings; ivory laterally on face above clypeus, mandibles, malar space, pronotal lobe in some specimens; brownish-red on mouthparts, apical margin of cly-

peus, mandibles mostly, antennae, tibiae, tarsi, other parts of legs in some specimens, wingbase; forewing light brown, hindwing with dark circular apical spot. Pubescence pale, not longer than least interocellar distance; moderate on face, anterior of scutum, sternum; light on abdomen. Integument mostly microsculptured; face, vertex with fine shallow octangular pits with scattered macropunctures, somewhat shiny; dorsum of thorax slightly shiny with fine pits; pleuron, sternum like scutum except for shiny impunctate hypoepimeron; propodeum with regular, small, shallow reticules with few ridges radiating from metanotum, and laterally spiculate with few oblique ridges; legs, abdomen somewhat shiny with fine, shallow micropunctures. Median clypeal lobe with 2 short, stout teeth; distance between teeth slightly longer than diameter of midocellus; flagellomeres stout with tyloides on V and VI, VIII–X with smaller, basal swellings; malar space less than diameter of midocellus; ocellar triangle broader than high; least interocular distance equal to length of flagellomeres I–III; least ocellocular distance 1¼ times lateral ocelli; length 4.5–6 mm.

FEMALE.—About as in male except: no white markings, less reddish brown on face; body quite shiny with microsculpturing very fine; face, vertex with scattered macropunctures; propodeum laterally with 3–4 horizontal striae; clypeal teeth short, not longer than half diameter of midocellus; least ocellocular distance as long as diameter of lateral ocelli; pygidium short, slightly depressed subapically.

Variation.—The male antennae are entirely red in some specimens and the area of white facial pigmentation is more extensive on some males. Some specimens are quite polished, especially the females.

Systematics.—Krombein (1951) synonymized *fossor* under *brunneipes*. However, the two can be adequately separated by characters stated in the key. *D. fossor* is one of the smaller of the dark species and is easily distinguished by its relatively long, least interocular distance and the short 1st 3 flagellomeres. Females may be confused with *sierrense* because of their similar size and distributions, but they can be separated by differences in the shape of the interocellar triangle—higher than broad in *sierrense* (Fig. 30) and vice versa in *fossor* (Fig. 31). Rohwer's type of *rufoantennatum* has all red antennae, but this character varies within populations of *fossor*.

Range.—This species inhabits the mountains of western North America, generally at higher elevations; some specimens have been collected at elevations of over 11,000 ft. I have seen specimens from the Northwestern Territories of Canada, south to Southern California and east to Colorado; Fig. 4.

Material Examined.—34 ♂, 35 ♀, May to August.

Diploplectron sierrense, n. sp.

(Fig. 5, 15, 30, 36, 37)

HOLOTYPE MALE.—Black with brownish-red markings; most of mandible, malar space, mouthparts, clypeus medially, tibiae, tarsi, tegula, wingbase reddish-brown; hindwing with circular spot. Pubescence pale, sparse. Body quite shiny with shallow micropunctures; face finely micropunctate with linear row of macropunctures below midocellus; vertex more shagreen; scutum shiny with scattered pits anteriorly; pleuron quite shiny with scattered setae; propodeal enclosure with uniform reticules, appearing granulate, laterally more coarse; abdomen shiny but finely micropunctate. Median clypeal lobe with 2 small short teeth; malar space about as long as ½ diam of lateral ocellus; ocellar triangle equilateral; flagellomeres with tyloides ventrally on V and basally on VI; least interocular distance as long as flagellomeres I and II; length 3.6 mm.

FEMALE.—About as in male except: setae on body brownish-black; face with more macropunctures; body shinier, less punctured, especially scutum; sculpture on propodeal enclosure coarser, becoming fine towards abdomen, laterally with oblique ridges (9–11); clypeal teeth smaller, ocellar triangle higher than broad; pygidium weak, with lateral carina developed only ⅛ length of tergite.

Variation.—The punctation on the face is finer in some males.

Systematics.—*D. sierrense* is one of the small black species. The males are easily distinguished from others by the lack of white facial markings (Fig. 36) and the broad least interocular distance. Females are quite polished and have a higher than broad ocellar triangle (Fig. 30).

Types.—Holotype ♂, Sierraville, Calif., VII-26-56 (R. M. Bohart). Ten paratypes, near Hobart Mills, Nevada Co., Calif., VI-18-62 (R. M. Bohart). Metatypes, 45 from the following localities in CALIFORNIA: 4 miles N Silver Lake, Amador Co.; Strawberry, Tuolumne Co.; McArthur; Independence Lake, Sierra Co.; Boca; Winnemucca Lake, Alpine Co.; Ruby Lake, Inyo Co.; Yuba Pass, Sierra Co.; Little River, Humboldt Co.; Carnelian Bay, Lake Tahoe; Grass Lake, El Dorado Co.; Sagehen Creek, Nevada Co.; Salie Keyes Lake, Fresno Co.; Blanco Corral, White Mts., Mono Co.; Broackway Summit, Placer Co.; Sonora Pass, Tuolumne Co. NEVADA: Mt. Rose Summit, Washoe Co.

Holotype deposited in the collection of the University of California, Davis campus.

Range.—The known distribution of *sierrense* is the Sierra Nevada Mountains of California and Nevada; Fig. 5.

Diploplectron californicum, n. sp.

(Fig. 1, 13, 25)

HOLOTYPE MALE.—Black; creamy white on mandible, most of clypeus, laterally on lower frons, pronotal lobe, band across apical margin of pronotum; reddish on apical clypeal margin, scape, mouthparts, most of legs except dorsally on mid- and hindleg, tegula; wings darker posteriorly, hindwing with subapical spot. Pubescence white, moderate behind head, on scutum, notum. Punctation mostly spiculate; face coarsely pitted below midocellus, reticulate and becoming finer at vertex; pronotum coarsely pitted,

dull; scutum entirely punctured but shiny; scutellum pitted except medially, shiny; mesopleuron densely punctured, spiculate, shiny; hypoepimeron impunctate, shiny; propodeal enclosure closely, finely granulate, laterally with coarse oblique ridges; legs, abdomen more finely sculptured, rather shiny. Base of mandible touching lower part of compound eye; median clypeal lobe with sharp V-shaped excision; flagellomere I short, about twice as long as broad, V and VI with tyloides; ocellar triangle higher than broad; lateral ocelli separated by less than their diameter; least interocular distance less than length of flagellomeres I and II; length 5.2 mm.

FEMALE.—About as in male except as follows: mandible, clypeus medially reddish; legs darker; body more finely pitted, shinier, especially scutum, mesopleuron; pygidium broadly rounded apically, coarsely pitted subapically.

Variation.—The legs are darker in some specimens and the notum less coarsely pitted.

Systematics.—D. californicum is closely related to *peglowi* but the males of the former can be separated by the shorter flagellomere I, white pronotal lobe, and the mandible touching the compound eye. The higher ocellar triangle will separate *californicum* (Fig. 13) from *brunneipes* (Fig. 17). Females of *californicum* can be separated by the short flagellomeres (I and II), the pygidium coarsely pitted subapically (Fig. 25), and the propodeum laterally coarsely ridged and polished. Females of *peglowi* have longer flagellomeres (I and II) (Fig. 26), the pygidium is depressed subapically and polished, and the propodeum laterally is weakly ridged and granular.

Types.—Holotype ♂, Davis, Calif., X-2-61 (F. D. Parker); 32 ♂ and 10 ♀ paratypes, Davis, Calif., September to October (M. E. Irwin, F. D. Parker, L. A. Stange). Metatypes, 38 ♂ and 48 ♀, June to October from California, Idaho, and Oregon. Holotype deposited in the collection at the University of California, Davis campus.

Range.—Western United States; Fig. 1.

Diploplectron vierecki Pate

(Fig. 7, 11, 28)

Diploplectron vierecki Pate, 1941: 4. (Holotype ♂, "Franklin Mts., nr. El. Paso, Texas," Acad. Nat. Sci. Phila. no. 10601).

MALE.—Black; ivory medially on mandible; spot on malar space, femora apically, tibiae, abdomen red; hindwing with apical brown spot. Pubescence short, silvery; moderate on thorax; setae on legs black. Body rather shiny, yet moderately punctured; face shallowly reticulate, but shiny with scattered macropunctures; interocellar area more reticulate; vertex shiny, finely reticulate; pronotum, scutum, heavily pitted anteriorly; pleuron shiny, spiculate; hypoepimeron shiny; dorsal propodeal enclosure uniformly granulate, laterally with oblique ridge; legs, abdomen shiny. Malar area slightly greater than diameter of midocellus; clypeus produced, median lobe with 2 teeth; flagellomere V with small nipplelike tyloides, VI with one basally; ocelli in equilateral triangle; least interocular distance as long as flagellomeres III–V; length 4.5 mm.

FEMALE.—About as in male except: no white markings; legs darker red; pubescence black; body shinier, less reticulate; face with more macropunctures; ocellar triangle wider than high; reticulation of dorsal propodeal enclosure coarser; laterally with prominent oblique ridges (7–10); pygidium weak, depressed subapically.

Variation.—The punctation of the face and scutum is heavier in some specimens.

Systematics.—There are 3 rather polished species with a black thorax and red abdomen: *secoense, vierecki,* and *irwini.* All have a long interocular length, the males have the median lobe of the clypeus emarginate apically, and the midocellus is larger than the lateral ones. Females are quite shiny with a more pronounced clypeal lobe than other species.

Males of *vierecki* can be separated from other males in this group by their black and more finely sculptured face and their shorter malar space. Females have no white markings and a weakly developed pygidium.

Range.—This species apparently inhabits the lower sonoran deserts of Arizona, New Mexico, and Texas; Fig. 7.

Material Examined.—15 ♂, 5 ♀, March to April.

Diploplectron irwini, n. sp.

(Fig. 7, 12)

HOLOTYPE MALE.—Black; mandibles partly, pronotal lobe, spot on foretibia ivory white; tibiae partly, abdomen red; forewing mostly hyaline, hindwing with subapical spot. Pubescence short, white, moderate on face, behind head and notum. Punctation not uniform, lower frons coarsely pitted, reticulate, dull; vertex shagreen, shiny; pronotum, scutum anteriorly, mesopleuron closely pitted, shiny; summit of scutum, scutellum polished; propodeal enclosure finely granulate, laterally spiculate; legs, abdomen finely sculptured, shiny. Malar space wider than median clypeal lobe with broad V-shaped excision; flagellomeres I and II about twice as long as wide; V and VI flattened beneath, tyloides flat, linear; least interocular distance greater than length of flagellomeres I and II; ocellar triangle broader than high; lateral ocelli separated by 1.5 times their diameter; length 4.3 mm.

FEMALE.—Unknown.

Variation.—The propodeum laterally is more ridged in some specimens.

Systematics.—This species is closely related to *D. vierecki.* Males can be separated by the shape of the tyloides on flagellomeres V and VI, which are nipplelike in *vierecki* and flat and linear in *irwini.* The face of *irwini* is coarsely pitted and dull, but in *vierecki* it is shallowly pitted and shiny. Also, the pronotal lobe of *irwini* is white whereas this structure is black in *vierecki.*

Apparently this species is autumnal.

dull; scutum entirely punctured but shiny; scutellum pitted except medially, shiny; mesopleuron densely punctured, spiculate, shiny; hypoepimeron impunctate, shiny; propodeal enclosure closely, finely granulate, laterally with coarse oblique ridges; legs, abdomen more finely sculptured, rather shiny. Base of mandible touching lower part of compound eye; median clypeal lobe with sharp V-shaped excision; flagellomere I short, about twice as long as broad, V and VI with tyloides; ocellar triangle higher than broad; lateral ocelli separated by less than their diameter; least interocular distance less than length of flagellomeres I and II; length 5.2 mm.

FEMALE.—About as in male except as follows: mandible, clypeus medially reddish; legs darker; body more finely pitted, shinier, especially scutum, mesopleuron; pygidium broadly rounded apically, coarsely pitted subapically.

Variation.—The legs are darker in some specimens and the notum less coarsely pitted.

Systematics.—D. californicum is closely related to *peglowi* but the males of the former can be separated by the shorter flagellomere I, white pronotal lobe, and the mandible touching the compound eye. The higher ocellar triangle will separate *californicum* (Fig. 13) from *brunneipes* (Fig. 17). Females of *californicum* can be separated by the short flagellomeres (I and II), the pygidium coarsely pitted subapically (Fig. 25), and the propodeum laterally coarsely ridged and polished. Females of *peglowi* have longer flagellomeres (I and II) (Fig. 26), the pygidium is depressed subapically and polished, and the propodeum laterally is weakly ridged and granular.

Types.—Holotype ♂, Davis, Calif., X-2-61 (F. D. Parker); 32 ♂ and 10 ♀ paratypes, Davis, Calif., September to October (M. E. Irwin, F. D. Parker, L. A. Stange). Metatypes, 38 ♂ and 48 ♀, June to October from California, Idaho, and Oregon. Holotype deposited in the collection at the University of California, Davis campus.

Range.—Western United States; Fig. 1.

Diploplectron vierecki Pate

(Fig. 7, 11, 28)

Diploplectron vierecki Pate, 1941: 4. (Holotype ♂, "Franklin Mts., nr. El. Paso, Texas," Acad. Nat. Sci. Phila. no. 10601).

MALE.—Black; ivory medially on mandible; spot on malar space, femora apically, tibiae, abdomen red; hindwing with apical brown spot. Pubescence short, silvery; moderate on thorax; setae on legs black. Body rather shiny, yet moderately punctured; face shallowly reticulate, but shiny with scattered macropunctures; interocellar area more reticulate; vertex shiny, finely reticulate; pronotum, scutum, heavily pitted anteriorly; pleuron shiny, spiculate; hypoepimeron shiny; dorsal propodeal enclosure uniformly granulate, laterally with oblique ridge; legs, abdomen shiny. Malar area slightly greater than diameter of midocellus; clypeus produced, median lobe with 2 teeth; flagellomere V with small nipplelike tyloides, VI with one basally; ocelli in equilateral triangle; least interocular distance as long as flagellomeres III–V; length 4.5 mm.

FEMALE.—About as in male except: no white markings; legs darker red; pubescence black; body shinier, less reticulate; face with more macropunctures; ocellar triangle wider than high; reticulation of dorsal propodeal enclosure coarser; laterally with prominent oblique ridges (7–10); pygidium weak, depressed subapically.

Variation.—The punctation of the face and scutum is heavier in some specimens.

Systematics.—There are 3 rather polished species with a black thorax and red abdomen: *secoense, vierecki,* and *irwini.* All have a long interocular length, the males have the median lobe of the clypeus emarginate apically, and the midocellus is larger than the lateral ones. Females are quite shiny with a more pronounced clypeal lobe than other species.

Males of *vierecki* can be separated from other males in this group by their black and more finely sculptured face and their shorter malar space. Females have no white markings and a weakly developed pygidium.

Range.—This species apparently inhabits the lower sonoran deserts of Arizona, New Mexico, and Texas; Fig. 7.

Material Examined.—15 ♂, 5 ♀, March to April.

Diploplectron irwini, n. sp.

(Fig. 7, 12)

HOLOTYPE MALE.—Black; mandibles partly, pronotal lobe, spot on foretibia ivory white; tibiae partly, abdomen red; forewing mostly hyaline, hindwing with subapical spot. Pubescence short, white, moderate on face, behind head and notum. Punctation not uniform, lower frons coarsely pitted, reticulate, dull; vertex shagreen, shiny; pronotum, scutum anteriorly, mesopleuron closely pitted, shiny; summit of scutum, scutellum polished; propodeal enclosure finely granulate, laterally spiculate; legs, abdomen finely sculptured, shiny. Malar space wider than median clypeal lobe with broad V-shaped excision; flagellomeres I and II about twice as long as wide; V and VI flattened beneath, tyloides flat, linear; least interocular distance greater than length of flagellomeres I and II; ocellar triangle broader than high; lateral ocelli separated by 1.5 times their diameter; length 4.3 mm.

FEMALE.—Unknown.

Variation.—The propodeum laterally is more ridged in some specimens.

Systematics.—This species is closely related to *D. vierecki.* Males can be separated by the shape of the tyloides on flagellomeres V and VI, which are nipplelike in *vierecki* and flat and linear in *irwini.* The face of *irwini* is coarsely pitted and dull, but in *vierecki* it is shallowly pitted and shiny. Also, the pronotal lobe of *irwini* is white whereas this structure is black in *vierecki.*

Apparently this species is autumnal.

Types.—Holotype ♂ and 3 paratypes, Arizona Canal near Highway 87, 30 miles E Phoenix, Ariz., XII-6-62 (M. E. Irwin). One metatype, 2 miles NE Portal, Ariz., XI-28-61 (M. Cazier).

Holotype deposited in the collection of the University of California, Davis campus.

Range.—Arizona; Fig. 7.

Diploplectron secoense, n. sp.

(Fig. 7, 20, 29)

HOLOTYPE MALE.—Black with ivory and reddish-brown markings; ivory on base of mandibles, spot on malar space, medial and lateral spots on clypeal margin, pronotal lobe, spot at base of tibiae; red on part of mandibles, mouthparts, femora apically, tibiae, tarsi, tegula, wingbase, all of abdomen; wings mostly clear, hindwing with subapical spot. Pubescence silvery; moderate below ocelli; more scattered on thorax and abdomen; moderate on sternum. Punctation dense on lower frons with medial, lateral strips of more sparsely pitted areas; micropunctures shallow; scutum with similar pattern but pleuron more spiculate, shiny; propodeal enclosure coarse towards base, laterally with thin, oblique ridges; abdomen finely microsculptured, shiny. Median clypeal lobe produced but indented apically, forming 2 teeth; malar space as wide as twice the diameter of midocellus; tyloides ventrally on flagellomeres V–VII and basally on VIII; interocellar triangle broader than high; least interocular distance slightly longer than length of flagellomeres I and II; length 5.3 mm.

FEMALE.—About as in male except: ivory markings on only pronotal lobe; face shinier, less punctured below midocellus; base of mandible touching compound eye; fewer ridges on propodeum, but coarser; pygidium pointed, lateral carina ¼ length of tergite.

Systematics.—Males of this species can be distinguished from both *irwini* and *vierecki* by the white markings on the clypeus and lower frons. Also, the malar space is wider in *secoense.* Females are more difficult to distinguish, but the pronotal lobe is white in *secoense* and black in *vierecki.*

Types.—Holotype ♂ and 2 paratypes, Arroyo Seco Camp, Monterey Co., Calif., V-11-58 (L. A. Stange, A. S. Menke). One paratype, same locality, V-5-56 (P. Torchio). Two metatypes, Riverside, Calif., IV-26-59 (P. H. Timberlake); Corona, Calif., IV-1910.

Holotype deposited in the collection at the University of California, Davis campus.

Range.—Apparently this species is a Californian one that occurs along the Coast Range and Sierra Nevada Mountains; Fig. 7.

Diploplectron orizabense, n. sp.

(Fig. 6, 33)

HOLOTYPE FEMALE.—Black; reddish on mandible, abdomen; foretarsi reddish brown; wings mostly hyaline except for brown veins. Pubescence short, scant, black on head, thorax; whitish on abdomen. Punctation mostly finely shagreen, shiny; face with fine, close granular pits, rather dull; vertex more finely sculptured, shiny; most of thorax finely shagreen and shiny; propodeal enclosure finely reticulate with transverse pattern; laterally granular with raised ridges; abdomen, legs shinier. Median clypeal lobe small, apically with broad V-shaped notch, lateral teeth minute; ocellar triangle broader than high; lateral ocelli separated by their diameter; head viewed from above narrower than most females (Fig. 33); least interocular distance as long as length of pedicle plus flagellomeres I and II; pygidium weak, depressed subapically, shiny; length 4.7 mm.

MALE.—Unknown.

Systematics.—The clypeus, narrow head, and wide least interocular distance will separate *D. orizabense* from other known females that have a red abdomen. This species appears to be related to the *vierecki* group.

Type.—Holotype ♀, 10 miles W Orizaba, V.C., Mexico, XII-31-40 (G. E. Bohart). Holotype deposited in the collection of the University of California, Davis campus.

Range.—Southern Mexico; Fig. 6.

Diploplectron kantsi Pate

(Fig. 6, 9, 24)

Diploplectron kantsi Pate, 1941: 6 (Holotype ♂, "El Paso, Tex., IV-6-02," Acad. Nat. Sci. Phila. no. 10602).

MALE.—Black; hindlegs partly, abdomen red; forewings light brown, hindwing with subapical spot. Pubescence scant, short, silvery-white. Punctation rather uniform; body densely, closely granulate, dull; legs, abdomen finely sculptured, somewhat shiny. Malar space as long as diameter of midocellus; median clypeal lobe minutely truncate apically; median ocellus slightly larger than lateral; ocellar triangle higher than broad; least interocular distance slightly longer than length of flagellomeres I and II; lateral ocelli separated from one another by more than their diameter; ocellocular distance 1.5 times diameter of lateral ocelli; length 4.5–5.5 mm.

FEMALE.—About as in male except as follows: median clypeal lobe with 2 short, blunt teeth; pubescence dark brown; least interocular distance greater than length of flagellomeres I and II; pygidium rounded apically, laterally indented, polished.

Variation.—The holotype has a partly white pigmented pronotal lobe.

Systematics.—This species is closely related to *reticulatum* and may be synonymous. However, I have examined 4 specimens that are good homotypes and both sexes can be separated from *reticulatum* by the wider least interocular distance.

Range.—Southwestern United States, northern Mexico; Fig. 6.

Material Examined.—1 ♂, 2 ♀, Granite Pass, Hildago Co., N. M., IV-6-65 (R. M. Bohart, F. D. Parker); 1 ♀, 15 miles N Llera, Tam., Mex., 11-24-72 (F. Parker, D. Miller).

Diploplectron diablense Williams

(Fig. 6, 10, 23)

Diploplectron diablense Williams, 1950: 363. (Holotype ♂, "Mount Diablo, California," Calif. Acad. Sci. *D. diablensis*).

MALE.—Black; ivory medially on mandible; spot laterally on clypeal margin, pronotal lobe, basally on foretibia; bright red on tibiae, tarsi, hind femur, abdomen; wings light brown, hindwing with apical spot. Punctation coarse, body dull; face finely granulate with overlay of scattered macropunctures; pronotum, scutum anteriorly, pleuron, laterally on propodeum coarser with raised granules; summit of thorax finely pitted, granular; legs, abdomen colsely punctured dorsally, ventrally finer, somewhat shiny. Pubescence short, mostly white; clypeal margin, sternum, legs with stiff brownish setae. Malar space as wide as diameter of midocellus; clypeus produced medially into short, sharp point; flagellomeres with thin linear tyloides on V–IX; least interocular distance about as long as length of flagellomere I; ocellar triangle higher than broad; length 5–6 mm.

FEMALES.—About as in male except: no white markings on face; mandibles reddish except apically; median clypeal lobe divided medially into 2 short, blunt teeth, laterally with small tooth; propodeum with lateral oblique ridges; pygidium narrow, lateral margin raised, more strongly developed than most species, polished.

Variation.—The compound eyes in some males are larger and more protuberant and the inner margin of the compound eye near the ocelli may be slightly indented.

Systematics.—In the western United States there are 3 species of *Diploplectron* that have a red abdomen and a rather dull body caused by the extensively granular-reticulate punctation. One, *diablense,* has extensive white facial markings in the males and both sexes have a narrowed least interocular length. The other two, *reticulatum* and *kantsi,* are smaller and have a wider interocular length. Females of *diablense* have larger teeth on the clypeal margin than the 2 aforementioned species.

Range.—Apparently this species is restricted to the Coast Range and Sierra Nevada Mountains in California; Fig. 6.

Material Examined.—12 ♂, 8 ♀, June to October.

Diploplectron reticulatum Williams

(Fig. 7, 8, 22)

Diploplectron reticulatum Williams, 1946: 648. (Holotype ♂, "Tucson, Arizona," Calif. Acad. Sci. *D. reticulatus*).

MALE.—Black; hindlegs mostly and abdomen bright red; hindwings with apical spot. Pubescence short, silvery on head, thorax; setae on legs, abdomen black. Punctation uniform, body dull, densely microreticulate; legs, abdomen somewhat shiny ventrally. Clypeal lobe produced medially into short, pointed snout; malar space as wide as diameter of midocellus; tyloides on flagellomeres V–X; flagellomere I three times as long as wide; least interocular distance as long as pedicel plus flagellomere I (Fig. 8); ocelli in equilateral triangle, separated from compound eye by at least their diameter; length 5–6 mm.

FEMALE.—About as in male except: clypeal lobe forked; face with more macropunctures; hindlegs mostly black; pygidium depressed along inner lateral margin.

Variation.—Most Californian males have a white pronotal lobe. The hindlegs vary from all red to red with the femora mostly black.

Systematics.—*D. reticulatum* is closely related to *kantsi* and the only reliable character to separate them is the wider least interocular length and short flagellomeres of kantsi.

Unlike other species of *Diploplectron* I have collected, this species flicks its wings constantly while crawling among mats of *Euphorbia,* as in the manner of some pompilids.

Range.—This species appears to occupy the lower sonoran deserts of California and Arizona; Fig. 7.

Material Examined.—12 ♂, 16 ♀, March to November.

Diploplectron neotropicum, n. sp.

(Fig. 6, 18, 35)

HOLOTYPE MALE.—Black; ivory medially on mandibles, spot laterally on clypeal margin, pronotal lobe, fore- and midtibiae basally; tibiae, tarsi, abdomen reddish-brown; forewing light brown, hindwing with subapical cloud. Punctation coarse, body mostly dull; face finely granulate with many large punctures; postocular shiny, less punctured; scutum, scutellum finely punctured, heavier anteriorly but summit shiny; pleuron laterally spiculate, dull; propodeal enclosure finely granular, laterally with raised granules; legs dull dorsally, polished ventrally; sternum shiny; abdomen dull, more finely pitted dorsally than ventrally. Pubescence white, moderate behind head and thorax. Malar space less than diameter of midocellus; cylpeus produced into median lobe, blunt apically; flagellomeres stout, ca. 2 times as long as wide, II–IX broadly rounded ventrally; V–IX with ventral, thin, linear tyloides; least interocular distance as long as length of pedicel plus flagellomere I; ocelli about in an equilateral triangle (16/19); length 6.5 mm; 2nd submarginal cell receiving both recurrent veins.

FEMALE.—About as in male except: clypeal lobe divided into 2 short, stout teeth; propodeum laterally with 14–16 ridges; pygidium wide, laterally with raised margin, shiny, convex medially.

Variation.—Most specimens have both recurrent veins ending in the 2nd submarginal cell. The punctation is coarser in more northern specimens which also have less white markings on the males.

Systematics.—In wing venation, *neotropicum* appears to be the least specialized *Diploplectron.* It is one of the largest red and black species. *D. netropicum* is related to *diablense,* as both have extensive white facial markings and protuberant compound eyes. The former can be distinguished in the males

by the short malar space and the short 1st 2 flagellomeres (Fig. 18). Females of *neotropicum* differ from those of *diablense* in their more polished body and wider pygidium.

Types.—Holotype ♂ and 6 paratypes, Nachic Chiapas, Mexico IV-27-59 (H. E. Evans). Metatypes, 25 from the following Mexican States; Nayarit, Morelos, Chiapas, Sinaloa, and the Federal District. Holotype deposited in the collection of Cornell University.

Range.—Mountains of southern Mexico; Fig. 6.

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