

DESCRIPTION OF A NEW SPECIES OF DIADOCIDIA
FROM CALIFORNIA

(Diptera: Mycetophilidae)

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The small subfamily Diadocidiinae of the family Mycetophilidae was previously known in North America by only two recent species, *Diadocidia ferruginosa* (Meigen), 1830 and *Diadocidia borealis* Coquillett, 1900 as well as a fossil form, *Diadocidia terricola* Scudder, 1878. The discovery of a new species is therefore of interest, and it is here described so that its name will be available for discussion in a forthcoming morphological paper.

The type locality of the new species is in a partially wooded field on the Stanford University campus about 100 yards northeast of the Stanford Mausoleum. This area has been partially replanted with Eucalyptus trees (*Eucalyptus globulus*). Some of the trees have been cut down, and the resultant rotting stumps provide an attractive breeding place. Adults have been collected in large numbers around and within the hollows of these stumps, while the larvae have been found in moderate numbers in the decaying wood.

The authors are indebted to Mr. Paul Freeman and the authorities of the British Museum (Natural History) for the gift of a male specimen of *Diadocidia ferruginosa* and to Dr. Alan Stone and the authorities of the United States National Museum for the loan of specimens of *Diadocidia borealis*.

Diadocidia stanfordensis Arnaud and Hoyt, new species

Male.—*Head* mainly gray-black; palpi yellowish-brown; antennae with first two segments yellow-brown; remaining 14 segments uniformly gray with short yellow hairs. Ratio of antennal segments 8:9:26:16:15:15:15:15:14:14:14:13:12:12:13. *Thorax* grayish-yellow, with yellowish colored hairs; dorsally with a median and a pair of lateral, lightly colored vittae which converge posteriorly; scutellum with yellowish colored hairs. Coxae to femora yellow-brown; tibiae, tarsi and spurs dark grey.

Ratio of length of leg segments

	C	Tr	F	Ti	T1	T2	T3	T4	T5	Claws
Fore leg	30	7	46	65	43	15	12	8	7	2
Mid leg	32	7	52	75	42	13	10	6	5	2
Hind leg	25	7	64	101	41	13	10	6	6	2

Wing venation as illustrated in Figure 1, D. Veins and membrane conspicuously hairy. Halteres yellowish-brown. *Abdomen* unicolorous, gray, with light colored hair. Segments one and eight shortened; segment one a

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little longer than half length of second; segment eight less than half length of seventh. Male terminalia colored as abdomen. The characteristic terminalia are illustrated in Figures 1, A-C. Body length, 3.5 mm.; wing length, 3 mm.

Female.—Similar to male with exception of sexual armature. Fore tarsi not broadened. Terminal abdominal appendages as illustrated in Figures 1, E. Body length, 4 mm.; wing length, 4 mm.

Diadocidia stanfordensis, which is related to *ferruginosa*, may be readily separated by the characteristic divided dististyle in conjunction with the wing venation. The spermathecal structure in the female may also prove to be characteristic only of this species.

Holotype male, STANFORD UNIVERSITY, SANTA CLARA COUNTY, CALIFORNIA, April 22, 1952, (C. P. Hoyt), on slide. Allotype, female, same locality as holotype, collected January 19, 1952, (C. P. Hoyt), on slide. Holotype and allotype deposited in the collection of the Department of Entomology, California Academy of Sciences, San Francisco. Paratopotypes: 342 specimens, 327 males, 15 females, same locality as holotype, on the following dates and method of preservation: Slides: male, 22.IV.52 (Hoyt); 2 males, 19.I.52 (Hoyt). Alcohol: 19 males, 23.IV.52 (Arnaud); 45 males, 3 females, 26.I.53 (Arnaud); 152 males, 7 females; 5.II.53 (Arnaud); 68 males, 5 females, 18.II.53 (Arnaud). Pinned: 5 males, 26.II.52 (Arnaud); 20 males, 11.III.54 (Arnaud); 15 males, 25.III.54 (Arnaud). Paratopotype slides have been deposited in the collections of the United States National Museum and the British Museum (Natural History).

Our method of collecting population samples of the new species has resulted in an interesting ratio of approximately 20 males to 1 female.

The larva of *stanfordensis* is enclosed in a slime tube which it secretes as it moves along over the surface of the wood. The track left by this collapsed tube resembles that of a small slug or snail. The larva of *ferruginosa* has been figured and discussed by Madwar (1937:36-39) and differs from *stanfordensis* in the number of inner mandibular teeth, *ferruginosa* having two, *stanfordensis* one.

CHECKLIST OF RECENT DIADOCIDIA:

1. *borealis* Coquillett, 1900.....North America
2. *ferruginosa* Meigen, 1830.....Europe, North America
3. *ferruginosa* var. *thoracica* Okada, 1936.....Japan
4. *nigripalpis* Edwards, 1940.....Chile, Brazil

5. *spinosula* Tollet, 1948.....Belgium
 6. *stanfordensis* Arnaud and Hoyt, 1956.....California
 7. *valida* Mik, 1874.....Central Europe
 8. species (Freeman, 1951).....Tasmania

LITERATURE CITED

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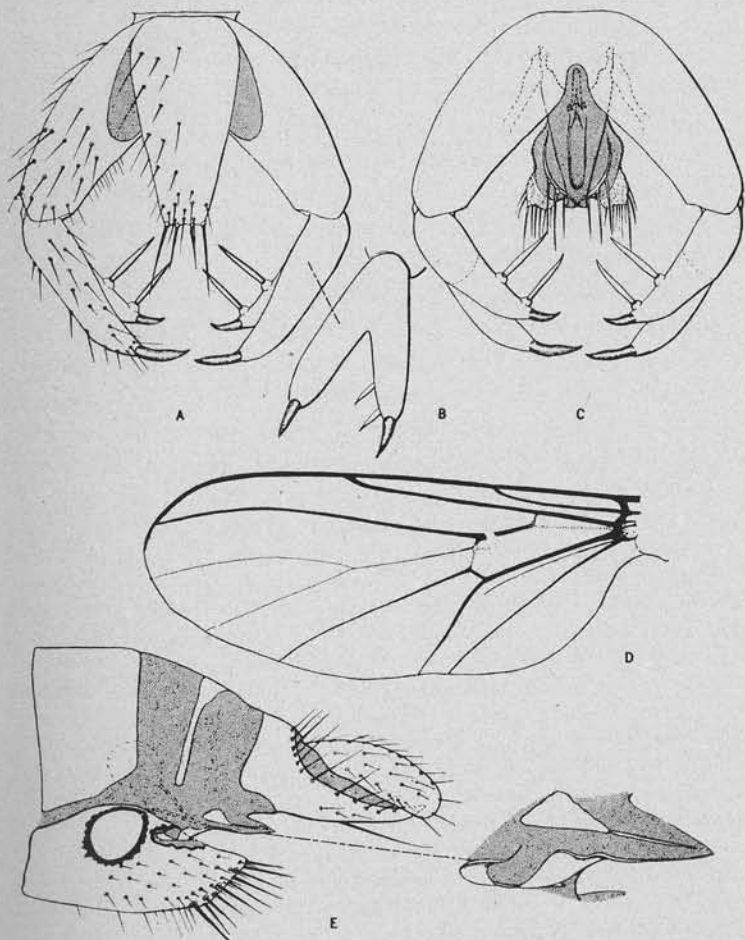


Fig. 1. *Diadocidia stanfordensis*: A. Dorsal aspect of male terminalia; B. Apical aspect of dististyle; C. Ventral aspect of male terminalia; D. Wing of male; E. Lateral aspect of terminal abdominal segments of female.

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DESCRIPTION OF TWO NEW SPECIES OF DIADASIA FROM NORTH AMERICA¹

(Hymenoptera: Apoidea)

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Since the genus *Diadasia* extends far into South America and the bee fauna of Mexico is only beginning to be studied extensively, discovery of a new species in Mexico was not unlooked for, but that a large and beautiful new species should turn up in New Mexico seems strange and noteworthy.

Diadasia mexicana Timberlake, new species

This new species from Zacatecas, Mexico, is a close ally of *D. diminuta* (Cresson) and rather difficult to distinguish therefrom in the female sex. The male is easily recognized by the dense, ochreous hair on the apical ventral segment and by the longer, shaggier hair on the tergum of the abdomen. The genitalia of the two species are very distinctive.

Female.—Black, the tegulae at apex and base of the claws with a reddish tinge, the tibial spurs testaceous. Pubescence ochreous, becoming paler or whitish on under side of head and thorax and inner side of legs. Apical fringe on tergite 5, except at sides, brown or blackish; hair of tergite 6, of the venter almost entirely, and of inner side of middle and hind basitarsi, black or blackish. Upper part of frons and each side of the vertex beyond ocelli, as well as a large area on middle of disk of mesoscutum, almost perfectly nude. Hair of tergum of abdomen long, fine, and depressed except on the basal part of the first segment, becoming much denser at apex of tergites 1 to 4 to form distinct narrow bands. Punctuation rather coarse and sparse on clypeus, virtually obsolete on frons and vertex, and fine and moderately close on mesoscutum, except that it is obsolescent on middle of disk. The female is distinguishable from *diminuta* by the finer hair of tergum of abdomen; the broader apical bands; the more finely and more sparsely punctured mesoscutum, with a large, nearly impunctate median area; and by the hair on the nearly nude area of frons, which is finer, shorter, and much less evident than in *diminuta*. Length, about 8-9 mm.; anterior wing, 6.9-8 mm.

¹ Paper No. 881, University of California Citrus Experiment Station, Riverside, California.