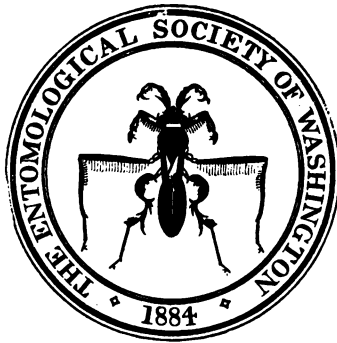


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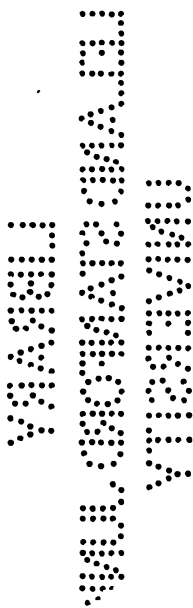
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D. W. COQUILLETT,	OTTO HEIDEMANN,	



—The next paper was by Mr. Schwarz, entitled:

A NEW COCCINELLID ENEMY OF THE SAN JOSE SCALE.

By E. A. SCHWARZ.

Mr. C. L. Marlatt who lately visited Southern California found a small Coccinellid quite abundant on fruit trees infested by the San José Scale (*Aspidiotus perniciosus*), and reports that it is well known among the orchardists of Southern California as an efficient enemy of that Coccid. From a study of specimens submitted to me by Mr. Marlatt I find that they belong to the genus *Pseudoweisea* Cockerell. These minute Coccinellids, originally described by Dr. LeConte as *Pentilia* and subsequently referred by J. Weise to his genus *Smilia* (the name changed to *Epismilia* and finally to *Pseudoweisea* by Prof. Cockerell), all prey exclusively upon Diaspinæ. In former years they were quite rare in collections, but since economic entomologists have paid attention to the enemies of imported Coccids, it was found that they are in reality quite abundant.

***Pseudoweisea suturalis*, n. sp.**

Rounded oval, convex; head and thorax nearly opaque, elytra shining. Head, thorax, underside and legs black; elytra brownish red with the suture narrowly black. Head but little wider than long, with the upper surface flattened. Prothorax forming a distinct obtuse with the elytra, oblique line at anterior angles distinct but not prolonged along the lateral margin, basal marginal line distinct at the sides but very fine at the middle, upper surface finely alutaceous and with sparse shallow larger punctures. Elytra not alutaceous, rather strongly but not densely punctured, sutural stria distinct throughout, but very fine near the base. The black color is usually confined to the narrow space between the suture and the sutural striæ. Length 0.8 to 0.9 mm.

Type.—No. 7936, U. S. National Museum.

The National Museum has numerous specimens found by Mr. F. Maskew at Long Beach, Los Angeles Co., Cal., feeding on *Aspidiotus perniciosus*; and a long series of specimens bred by Mr. D. W. Coquillett from larvæ feeding on *Aspidiotus aurantii* at Los Angeles, Cal.

The species resembles in form of the body the eastern *P. missella*, but its head is narrower and the coloration different. More or less immature, or bred specimens have the sterna (excepting the metepisterna), and the abdomen brownish or reddish.

It may be that Mr. H. C. Fall's remarks on the occurrence of *P. (Smilia) ovalis* Lec.,* refer to *P. suturalis*. The former seems to be confined to the more southern parts of Florida and is readily known from the more elongate form of the body.

* Occas. Papers Cal. Ac. Sc., VIII, p. 85, 1901.

Mr. Coquillett has kindly placed at my disposal a copy of his field notes (written in 1892) referring to the larva and pupa of this species. These notes read as follows:

"No. 344.—Larva resembles fig. 364, page 432, of Packard's 'Guide to the Study of Insects.'

"Body 12 segmented, olive-brown in the younger ones, becoming salmon-brown in the older ones; head black, horizontal, depressed, about one-half longer than wide, one-half as wide as the first thoracic segment; the latter is longer than any of the other body segments and is marked with two black dorsal spots placed transversely; body widest at the third abdominal segment, last segment rounded behind, devoid of processes, furnished with a retractile proleg; body sparsely clothed with microscopic hairs each tipped with a minute translucent globule, mostly white but sometimes tinged with yellow; the six thoracic legs black; length 1.50 mm.

"Found several at Los Angeles, Cal., February 12, 1892, on orange trees infested with *Aspidiotus aurantii* and red spiders upon both of which they appeared to feed. In pupating the larval skin is worked back until the middle of the dorsum of the first five abdominal segments are exposed to view, but the sides of the fourth and fifth segments and the ends of the wing cases remain concealed by the old larval skin.

"The pupa varies in color from pale yellow to deep orange-yellow, with the first thoracic segment dark brown and marked with a whitish medio-dorsal line; the pupa is covered with short hairs most abundant at the front end and sides, and each tipped with a minute translucent globule. Length 1.25 mm.

"Two larvæ pupated March 1st, but the date of the issuing of the adults was not noted."

Mr. Schwarz, in this connection, stated that in the North American fauna there are comparatively few Coccinellidæ that feed upon the armored scales (Diaspinæ). Beside the genus *Chilocorus* and allied genera he knew only a few isolated genera of other sub-families which have this habit. These are (1) the various species of *Pseudoweisea*; (2) the two species of *Cephaloscymnus*, our eastern species, which feeds upon the maple scale (*Aspidiotus furfurus*), and the western species which has been observed in Arizona preying upon an *Aspidiotus* on oak; (3) the species of *Nipus*, our smallest Coccinellidæ, representing the sub-family Cranophorinæ, which appear, however, to be too rare to have any economic importance; (4) the species of the genus *Scymnillus*.

In reply to a question by Prof. Piper, Mr. Schwarz stated that, so far as has been observed, all Coccinellids that feed upon soft-bodied scales and aphids feed also upon "red spiders" (*Tetranychus*).